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STATES DEPARTMENT OF THE INTERIOR

# FINAL ENVIRONMENTAL STATEMENT

OCS SALE NO. 48 Volume 4 of 5



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Proposed  
1979 OUTER CONTINENTAL SHELF  
OIL AND GAS LEASE SALE  
OFFSHORE SOUTHERN CALIFORNIA

Prepared by the  
Bureau of Land Management

*Frank Dugg*  
Director



# FINAL ENVIRONMENTAL STATEMENT

UNITED STATES DEPARTMENT OF THE INTERIOR

OCS SALE NO. 48 Volume 4 of 5



Proposed  
1979 OUTER CONTINENTAL SHELF  
OIL AND GAS LEASE SALE  
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Prepared by the  
Bureau of Land Management  
*W. A. [Signature]*  
Director



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APPENDIX A

Tentative Tract List  
Proposed Lease Sale No. 48  
CHANNEL ISLANDS AREA OCS LEASING MAP NO. 6A

<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>	<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>
SBC-001	55N 87W	1,801	4,451	SBC-051	50N 81W	2,331	5,760
002	55N 86W	1,765	4,360	052	50N 80W	2,331	5,760
003	55N 85W	1,728	4,269	053	50N 79W	2,331	5,760
004	55N 84W	1,691	4,178	054	50N 78W	2,331	5,760
005	55N 83W	1,654	4,087	055	50N 77W	2,331	5,760
006	55N 82W	486	1,200	056	50N 76W	2,331	5,760
007	54N 87W	2,331	5,760	057	50N 75W	2,331	5,760
008	54N 86W	2,331	5,760	058	50N 74W	2,331	5,760
009	54N 85W	2,331	5,760	059	50N 73W	2,331	5,760
010	54N 84W	2,331	5,760	060	50N 72W	2,331	5,760
011	54N 83W	2,331	5,760	066	49N 78W	2,331	5,760
012	54N 82W	1,497	3,700	067	49N 77W	2,331	5,760
013	53N 86W	2,331	5,760	068	49N 76W	2,331	5,760
014	53N 85W	2,331	5,760	069	49N 75W	2,331	5,760
015	53N 84W	2,331	5,760	070	49N 74W	2,331	5,760
016	53N 83W	2,331	5,760	071	49N 73W	2,331	5,760
017	53N 82W	2,331	5,760	072	49N 72W	2,331	5,760
018	53N 77W (S <sup>1</sup> / <sub>2</sub> )	1,166	2,880	077	48N 78W	2,331	5,760
019	53N 72W	1,497	3,700	078	48N 77W	2,331	5,760
021	52N 85W	2,331	5,760	079	48N 76W	2,331	5,760
022	52N 84W	2,331	5,760	080	48N 75W	2,331	5,760
023	52N 83W	2,331	5,760	081	48N 74W	2,331	5,760
024	52N 82W	2,331	5,760	082	48N 73W	2,331	5,760
025	52N 81W	2,331	5,760	083	48N 72W	2,331	5,760
026	52N 76W	2,331	5,760	088	47N 75W	2,331	5,760
027	52N 73W	2,331	5,760	089	47N 74W	2,331	5,760
028	52N 72W	2,331	5,760	090	47N 73W	2,331	5,760
031	51N 84W	2,331	5,760	091	47N 72W	2,331	5,760
032	51N 83W	2,331	5,760	098	46N 75W	1,619	4,000
033	51N 82W	2,331	5,760	099	46N 74W	1,578	3,900



LEASING MAP NO. 6A (Cont'd.)

<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>	<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>
SBC-034	51N 81W	2,331	5,760	SBC-100	46N 73W	1,255	3,100
035	51N 80W	2,331	5,760	101	46N 72W	1,416	3,500
036	51N 79W	2,331	5,760	SR-109	39N 73W	2,331	5,760
037	51N 78W	2,331	5,760	110	39N 72W	2,331	5,760
038	51N 77W	2,331	5,760	111	38N 73W	2,331	5,760
039	51N 76W	2,331	5,760	112	37N 72W	2,331	5,760
040	51N 75W	2,331	5,760	113	36N 73W	2,331	5,760
041	51N 74W	2,331	5,760	114	36N 72W	2,331	5,760
042	51N 73W	2,331	5,760				
043	51N 72W	2,331	5,760				
048	50N 84W	2,331	5,760				
049	50N 83W	2,331	5,760				
050	50N 82W	2,331	5,760				

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CHANNEL ISLANDS AREA OCS LEASING MAP NO. 6B

<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>	<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>
SBC-020	53N 71W	486	1,200	SBC-092	47N 71W	1,740	4,300
029	52N 71W	2,266	5,600	093	47N 70W	1,837	4,538
030	52N 70W (W $\frac{1}{2}$ W $\frac{1}{2}$ )	510	1,260	094	47N 69W	2,242	5,541
044	51N 71W	2,331	5,760	095	47N 68W	2,331	5,760
045	51N 70W (W $\frac{1}{2}$ W $\frac{1}{2}$ )	583	1,440	096	47N 67W	2,331	5,760
046	51N 63W (S $\frac{1}{2}$ )	1,166	2,880	097	47N 63W	2,331	5,760
047	51N 62W	728	1,800	102	46N 69W	121	299
061	50N 71W	2,331	5,760	103	46N 68W	610	1,508
062	50N 70W	2,331	5,760	104	46N 64W	1,100	2,719
063	50N 65W	2,331	5,760	105	46N 63W	1,756	4,338
064	50N 62W	2,266	5,600	106	46N 62W	2,331	5,760
065	50N 61W	1,133	2,800	107	45N 62W	894	2,210



LEASING MAP NO. 6B (Cont'd.)

<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>	<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>
SBC-073	49N 71W	2,331	5,760	SBC-108	45N 61W	1,113	2,749
074	49N 70W	2,331	5,760	SBI-115	35N 55W	2,331	5,760
075	49N 62W	2,331	5,760	116	34N 55W	2,331	5,760
076	49N 61W	2,331	5,760	117	32N 56W	1,457	3,600
084	48N 71W	2,331	5,760	118	31N 56W	1,255	3,100
085	48N 70W	2,331	5,760	119	30N 56W	2,331	5,760
086	48N 69W	2,331	5,760				
087	48N 59W	1,250	3,066				

CHANNEL ISLANDS AREA OCS LEASING MAP NO. 6C

<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>	<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>
SPB-120	35N 39W	1,295	3,200	DPSD-142	29N 30W	2,331	5,760
121	35N 38W	2,063	5,100	143	29N 29W	1,740	4,300
122	35N 36W	1,659	4,100	144	28N 30W	2,331	5,760
123	34N 39W	2,331	5,760	145	28N 29W	2,331	5,760
124	34N 36W	2,331	5,760	146	27N 29W	2,331	5,760
125	33N 39W	2,331	5,760	147	26N 27W	2,331	5,760
126	33N 38W	2,331	5,760	148	25N 27W	2,331	5,760
127	32N 39W	2,331	5,760	149	25N 26W	2,331	5,760
128	32N 37W	2,331	5,760	150	24N 26W	2,331	5,760
129	32N 35W	2,331	5,760	151	22N 27W	2,331	5,760
130	32N 34W	2,331	5,760	152	22N 26W	2,331	5,760
131	32N 33W	2,307	5,700	153	21N 26W	2,331	5,760
132	31N 38W	2,331	5,760	154	17N 24W	2,331	5,760
133	31N 37W	2,331	5,760	155	16N 24W	2,331	5,760
134	31N 36W	2,331	5,760	156	16N 23W	2,331	5,760
135	31N 34W	2,331	5,760				
136	31N 33W	2,331	5,760				
137	31N 32W	2,331	5,760				



LEASING MAP NO. 6C (Cont'd.)

<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>
SPB-138	30N 36W	2,331	5,760
139	30N 33W	2,331	5,760
DPSD-141	30N 30W	1,700	4,200
SPB-140	29N 33W	2,331	5,760
DPSD-157	15N 25W	2,331	5,760
158	14N 25W	2,331	5,760
159	14N 24W	2,331	5,760
160	13N 25W	2,331	5,760
161	13N 24W	2,331	5,760
162	12N 25W	2,331	5,760
163	12N 24W	2,331	5,760
164	12N 23W	2,331	5,760
165	11N 23W	2,331	5,760
166	11N 22W	2,331	5,760

CHANNEL ISLANDS AREA OCS LEASING MAP NO. 6D

<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>	<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>
TCB-167	20N 66W	2,331	5,760	TCB-183	13N 55W	2,331	5,760
168	20N 65W	2,331	5,760	184	13N 54W	2,331	5,760
169	20N 64W	2,331	5,760	185	13N 53W	2,331	5,760
170	20N 63W	2,331	5,760	186	12N 59W	2,331	5,760
171	19N 66W	2,331	5,760	187	12N 55W	2,331	5,760
172	19N 65W	2,331	5,760	188	12N 54W	2,331	5,760
173	19N 64W	2,331	5,760	189	12N 52W	2,331	5,760
174	19N 63W	2,331	5,760	190	11N 60W	2,331	5,760
175	19N 62W	2,331	5,760	191	11N 59W	2,331	5,760
176	19N 61W	2,331	5,760	192	11N 55W	2,331	5,760
177	18N 63W	2,331	5,760	193	11N 53W	2,331	5,760
178	18N 59W	2,331	5,760	194	11N 52W	2,331	5,760



LEASING MAP NO. 6D (Cont'd.)

<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>	<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>
TCB-179	17N 61W	2,331	5,760	TCB-195	10N 61W	2,331	5,760
180	14N 61W	2,331	5,760	196	10N 60W	2,331	5,760
181	13N 61W	2,331	5,760	197	10N 58W	2,331	5,760
182	13N 58W	2,331	5,760	198	10N 57W	2,331	5,760

CHANNEL ISLANDS AREA OCS LEASING MAP NO. 6E

<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>
TCB-199	9N 59W	2,331	5,760
200	9N 58W	2,331	5,760
206	8N 58W	2,331	5,760

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OCS OFFICIAL PROTRACTION DIAGRAM SAN CLEMENTE

No. NI 11-10

<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>
TCB-202	751N 59E	202	502
201	751N 58E	121	300
205	750N 60E	2,304	5,693
204	750N 59E	2,304	5,693
203	750N 58E	1,475	3,644
209	749N 60E	2,304	5,693
208	749N 59E	2,304	5,693
207	749N 58E	1,457	3,600
213	748N 61E	2,304	5,693



OCS OFFICIAL PROTRACTION DIAGRAM SAN CLEMENTE (Cont'd.)

<u>Tract No.</u>	<u>Block</u>	<u>Hectares</u>	<u>Acres</u>
TCB-212	748N 60E	2,304	5,693
211	748N 59E	2,304	5,693
210	748N 58E	1,439	3,556
216	747N 63E	2,304	5,693
215	747N 62E	2,304	5,693
214	747N 61E	2,304	5,693
217	746N 63E	2,304	5,693

SBC - Santa Barbara Channel  
 SR - Santa Rosa  
 SBI - Santa Barbara Island  
 SP - San Pedro  
 DPSD - Dana Point-San Diego  
 TCB - Tanner Cortes Bank



Notice to Lessees and Operators  
of  
Federal Oil and Gas Leases  
in the  
Outer Continental Shelf  
Pacific Area  
  
OCS ORDERS



UNITED STATES  
DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY  
CONSERVATION DIVISION

WESTERN REGION  
PACIFIC AREA



# I N D E X

OCS  
Order

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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
BRANCH OF OIL AND GAS OPERATIONS  
PACIFIC REGION

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS  
LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC REGION

MARKING OF WELLS, PLATFORMS, AND FIXED STRUCTURES

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.37. Section 250.37 provides as follows:

Well designations. The lessee shall mark promptly each drilling platform or structure in a conspicuous place, showing his name or the name of the operator, the serial number of the lease, the identification of the wells, and shall take all necessary means and precautions to preserve these markings.

The operator shall comply with the following requirements. Any departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

1. Identification of Platforms or Fixed Structures. Platforms and structures shall be identified at two diagonal corners of the platform or structure by a sign with letters and figures not less than 12 inches in height with the following information: the name of lease operator, the OCS lease number and the platform or structure designation. The information shall be abbreviated as in the following example:

"The Blank Oil Company operates 'C' platform on lease OCS-P 0000".

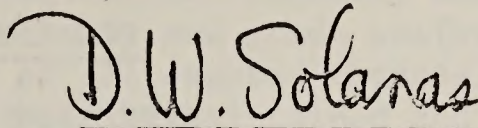
The identifying sign on the platform would show:

"BOC - OCS-P 0000 - C"

2. Identification of Non-Fixed Platforms or Structures. Floating semi-submersible platforms, bottom-setting mobile and floating drilling ships shall be identified by one sign with letters and figures not less than 12 inches in height affixed to the derrick to be visible from off the vessel with the following information: the name of the lease operator and the OCS lease number.

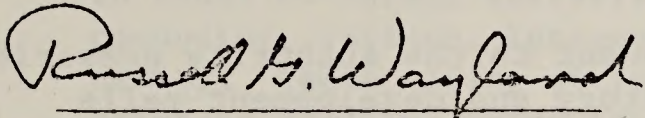


3. Identification of Individual Wells on Platforms. The OCS lease and well number shall be painted on, or a sign affixed to, each singly completed well. In multiple completed wells each completion shall be individually identified at the wellhead. All identifying signs shall be maintained in a legible condition.



D. W. Solanas  
Supervisor

Approved: June 1, 1971



Russell G. Wayland  
Chief, Conservation Division



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
PACIFIC AREA

OCS ORDER NO. 2

EFFECTIVE May 1, 1976

DRILLING PROCEDURES

This Order is established pursuant to the authority prescribed in 30 CFR 250.11. All exploratory and development wells drilled for oil and gas shall be drilled in accordance with 30 CFR 250.34, 250.41, 250.91, and the provisions of this Order which shall continue in effect until field drilling rules are issued. When sufficient geologic and engineering information is obtained through exploratory drilling, operators may make application or the Supervisor may require an application for the establishment of field drilling rules. After field drilling rules have been established by the Supervisor, development wells shall be drilled in accordance with such rules.

All wells drilled under the provisions of this Order shall have been included in an exploratory or development plan for the lease as required under 30 CFR 250.34. Each Application for Permit to Drill (Form 9-331C) shall include all information required under 30 CFR 250.91, and shall include a notation of any proposed departures from the requirements of this Order. All departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

The operator shall comply with the following requirements. All applications for approval under the provisions of this Order shall be submitted to the appropriate District Engineer. References in this Order to approvals, determinations, or requirements are to those given or made by the Supervisor or his delegated representative.

1. Well Casing and Cementing. All wells shall be cased and cemented in accordance with the requirements of 30 CFR 250.41(a)(1), and the Application for Permit to Drill shall include the casing design safety factors for collapse, tension, and burst.



All casing except drive pipe shall be new pipe which meets the API standards or reconditioned used pipe that has been tested to insure that it will meet API standards for new pipe. In addition, the surface casing and subsequent casing strings shall be inspected to detect transverse and longitudinal defects, determine wall thickness, pipe eccentricity and grade uniformity, and include a thread check of all exposed threads. Casing inspection reports shall be maintained and made available to the United States Geological Survey upon request.

For the purpose of this Order, the several casing strings in order of normal installation are drive or structural, conductor, surface, intermediate, protective, and production casing. These casing strings shall be run and cemented prior to drilling below the specified setting depths, subject to approved variations to permit the casing to be set in a competent bed. All depths refer to true vertical depth (TVD) below the ocean floor. Setting depths of all casing, except drive or structural, may have a tolerance of  $\pm 25$  feet ( $\pm 7.6$  metres). Determination of proper casing setting depths shall be based upon all relevant geological and engineering factors including the presence or absence of hydrocarbons. Formation fracture gradients, formation pressures, water depths, and zones of lost circulation or of other unusual characteristics shall be taken into account in the design of the well-casing program.

- A. Drive or Structural Casing. This casing shall be set by drilling, driving, or jetting to a minimum depth of 100 feet (30.5 metres) below the ocean floor to support unconsolidated deposits and to provide hole stability for initial drilling operations. If this portion of the hole is drilled or jetted, the drilling fluid shall be of a type that is in compliance with the liquid disposal requirements of OCS Order No. 7.
- B. Conductor Casing. This casing shall be set at a minimum depth of 300 feet (91.4 metres) or a maximum depth of 500 feet (152.4 metres) below the ocean floor; provided, however, the conductor casing shall be set before drilling into shallow formations known to contain oil or gas or, if unknown, upon encountering such formations.



C. Surface Casing. This casing shall be set at a minimum depth of 1,000 feet (304.8 metres) or a maximum depth of 1,200 feet (365.8 metres) below the ocean floor, but may be set as deep as 1,500 feet (457.2 metres) in the event the conductor casing is set at least 450 feet (137.2 metres) below the ocean floor.

D. Intermediate Casing. This casing shall be set before drilling below the setting depths specified in the following table:

Proposed Total Depth of Well or Proposed Depth of First Full String of Protective Casing (TVD in Feet (Metres) Below Ocean Floor)	Setting Depths for Intermediate Casing (TVD in Feet (Metres) Below Ocean Floor)	
	Minimum	Maximum*
0 - 3,500 (1066.8)	None required	
3,500 (1066.8) - 4,500 (1371.6)	1,500** (457.2)	3,500** (1066.8)
4,500 (1371.6) - 6,000 (1828.8)	1,750 (533.4)	3,500 (1066.8)
6,000 (1828.8) - 9,000 (2743.2)	2,250 (685.8)	3,500 (1066.8)
9,000 (2743.2) - 11,000 (3352.8)	2,750 (838.2)	3,500 (1066.8)
11,000 (3352.8) - 13,000 (3962.4)	3,250 (990.6)	3,500 (1066.8)
13,000 (3962.4) - Below	3,450 (1051.6)	3,550 (1082.0)

\* If as much as 1,500 feet (457.2 metres) of surface casing is set, intermediate casing may be set as deep as 4,500 feet (1371.6 metres) below the ocean floor.

\*\* No intermediate casing is required if as much as 1,500 feet (457.2 metres) of surface casing is set.

E. Protective Casing. This casing shall be set at any time when drilling below the surface or intermediate casing as dictated by well conditions. If a liner is used as a protective string, the lap shall be tested by a fluid entry or pressure test to determine whether a seal between the liner top and the next larger string has been achieved. The liner shall have a minimum lap length of 100 feet (30.5 metres). Test results shall be recorded on the driller's log. The operator shall notify the District Engineer when the test is to be conducted so that a Geological Survey representative may witness the test.

F. Production Casing. This casing shall be set before completing the well for production. When a blank or combination liner is run as production casing and the lap is cemented, the testing of the lap between



the liner top and next larger string shall be conducted as specified for protective liners. The surface casing shall never be used as production casing.

- G. Casing Cementing. The drive or structural casing, if drilled, and the conductor and surface casing annuli shall be filled with cement to the ocean floor. To facilitate casing removal upon well abandonment, the cement may be washed out of the annuli to a depth of 40 feet (12.2 metres) below the ocean floor. The intermediate casing shall be cemented to fill the annular space from the casing shoe to a minimum of 200 feet (61.0 metres) into the next larger string casing. The protective and production casing shall be cemented in a manner necessary to cover or isolate all zones which contain hydrocarbons and abnormal pressure intervals. Sufficient cement shall be used to provide annular fillup a minimum of 500 feet (152.4 metres) above the zones to be isolated or 500 feet (152.4 metres) above the casing shoe in cases where zonal coverage is not required.

When there are indications of improper cementing such as lost returns, cement channeling or mechanical failure of equipment, temperature or cement bond surveys shall be run before continuing operations to aid in determining if all zones containing hydrocarbons and/or abnormal pressures are isolated. If a survey indicates that an annular space is not adequately cemented, the operator, with prior approval of the District Engineer, shall recement in such a manner as to fill the necessary annular space and isolate the appropriate zones. Another survey shall then be run to aid in determining the adequacy of recementing.

After cementing any of the above casing strings, drilling shall not be commenced until after a time lapse of a minimum of eight hours under pressure for the conductor casings strings and twelve hours under pressure for all other casing strings; provided that sufficient time has elapsed for the bottom 500 feet (152.4 metres) of annular cement fill or the total length of annular cement fill, if less, to attain a compressive strength of at least 500 pounds per square inch (35.2 Kg/cm<sup>2</sup>). The typical



performance data for the particular cement mix used in the well shall be employed in calculating the time to reach minimum compressive strength.

Cement is considered to be "under pressure" if an acceptable means of holding pressure is used or if one or more float valves are employed to hold the cement in place.

- H. Pressure Testing of Casing. After cementing and before drilling below the shoe, all casing strings, except the drive or structural casing, shall be pressure tested over the interval from the cement collar to the casing head to the minimum pressure shown in the table below. The minimum internal yield pressure of the casing shall equal or exceed the test pressure. If the pressure declines more than 10 percent in 30 minutes, or if there are other indications of a leak, corrective measures must be taken until a satisfactory test is obtained. All pressure tests shall be recorded on the driller's log. The operator shall notify the District Engineer when such tests are to be conducted so that a Geological Survey representative may witness the test.

<u>Casing String</u>	<u>Minimum Surface Pressure (psi)</u>
Conductor	200 psi (14.06 Kg/cm <sup>2</sup> )
Surface	1,000 psi (70.30 Kg/cm <sup>2</sup> )
Intermediate	1,500 psi (105.5 Kg/cm <sup>2</sup> ) or 0.2 psi/ft. (.046 Kg/cm <sup>2</sup> /metre), whichever is greater
Protective	1,500 psi (105.5 Kg/cm <sup>2</sup> ) or 0.2 psi/ft. (.046 Kg/cm <sup>2</sup> /metre), whichever is greater
Casing String:	
Liner	1,500 psi (105.5 Kg/cm <sup>2</sup> ) or 0.2 psi/ft. (.046 Kg/cm <sup>2</sup> /metre), whichever is greater
Production	1,500 psi (105.5 Kg/cm <sup>2</sup> ) or 0.2 psi/ft. (.046 Kg/cm <sup>2</sup> /metre), whichever is greater

2. Blowout Prevention Requirements. Blowout preventers and related well control equipment shall be installed, used, and tested in a manner necessary to insure well control. A fail-safe design shall be incorporated into the blowout-prevention system and shall include dual



control systems and fail-safe valving on critical lines and outlets. In addition, for subsea blowout-preventer stacks, a subsea accumulator system is required to provide fast closure of the preventers and for cycling all critical functions in case of loss of connection to the surface. Prior to drilling below the drive or structural casing, blowout-prevention equipment shall be installed and maintained ready for use while drilling; however, the diverter and marine riser may be removed to install and cement casing until such time as the diverter system is replaced by the blowout-preventer equipment as required in paragraph 2D. Prior to the removal of the marine riser for installing casing, it shall be displaced with sea water and a determination made that sufficient hydrostatic head exists within the well bore to maintain a safe well condition. If repair or replacement of the blowout-preventer stack is necessary after installation as required in paragraph 2D or 2E, this work will be accomplished after casing has been cemented prior to drilling out the shoe or by setting a cement or bridge plug to insure safe well conditions.

A. General Requirements.

- (1) Blowout-Preventer Equipment. Blowout-prevention equipment shall consist of an annular and the specified number of ram-type preventers, one of which shall contain a blind ram. Subsea blowout-preventer stacks used with floating drilling vessels shall be equipped with blind-shear rams. The pipe rams shall be of proper size to fit the pipe in use. The working pressure of any blowout preventer shall exceed the maximum anticipated surface pressure to which it may be subjected. Information submitted with the Application for Permit to Drill shall include the maximum anticipated surface pressure and the criteria used to determine this pressure.

All blowout prevention systems shall be equipped with:

- (a) A hydraulic actuating system that provides sufficient accumulator capacity to close all blowout-prevention equipment units with a 50 percent operating fluid reserve at 1,200 psi (81.6 atms). A high pressure nitrogen



or accumulator back-up system shall be provided with sufficient capacity to close all blowout preventers and hold them closed. Locking devices shall be provided on the ram-type preventers.

- (b) An operable remote blowout-preventer-control station shall be provided, in addition to the one on the drilling floor.
- (c) A drilling spool with side outlets, if side outlets are not provided in the blowout-preventer body, shall be installed to provide for a kill line and choke manifold.
- (d) A kill line with a master valve located next to the well. This valve shall not be used for normal opening or closing on flowing fluids. The kill line shall have at least one control valve in addition to the master valve.
- (e) A choke manifold equipped with a hydraulic control valve, a master valve, three adjustable chokes of which one shall be a hydraulic adjustable choke, and an accurate pressure gauge. The choke manifold outlets shall be connected in such a manner that the well fluids may be directed to production facilities or emergency storage.
- (f) A fill-up line.
- (g) All valves, pipes, and fittings that can be exposed to pressure from the well bore shall be of a pressure rating at least equal to that of the blowout-prevention equipment.

(2) Auxiliary Equipment.

The following auxiliary equipment shall also be provided:

- (a) A top kelly cock shall be installed below the swivel, and an essentially full-opening kelly cock of such design that it can be run through blowout preventers shall be installed at the bottom of the kelly.



(b) An inside blowout preventer and an essentially full opening drill string safety valve in the open position shall be maintained on the rig floor at all times while drilling operations are being conducted. Such valves shall be maintained on the rig floor to fit all connections that are in the drill string. A safety valve shall be available on the rig floor assembled with the proper connection to fit the casing string that is being run in the hole at the time.

- B. Drive Pipe or Structural Casing. Before drilling below this string, at least one remotely controlled, annular-type blowout preventer or pressure-rotating, pack-off-type head and related equipment shall be installed for circulating the drilling fluid to the drilling structure or vessel. When the blowout-preventer system is on the ocean floor, the choke and kill lines or equivalent vent lines, equipped with necessary connections and fittings, shall be used for diversion. An annular preventer or pressure-rotating, pack-off-type head, equipped with suitable diversion lines as described above and installed on top of the marine riser, may be utilized for diversion. The diverter system shall provide as a minimum the equivalent of two 6-inch (15.2 cm.) internal diameter lines and full-opening valves to permit the full diversion of hydrocarbons.

The diverter system shall be equipped with automatic, remotely controlled valves which open, prior to shutting in the well. Lines venting in different directions to accomplish downwind diversion shall be provided. A schematic diagram and operational procedure for the diverter system shall be submitted with the Application for Permit to Drill (Form 9-331C) to the District Engineer for approval.

In drilling operations where a floating drill ship or semi-submersible type of drilling vessel is used and/or where the placement of the initial structural casing is not operationally feasible to provide adequate formation competence to subsequently safely contain shallow hydrocarbons or other fluids while drilling conductor hole, a program which provides for rig and personnel protection and safety in these operations



shall be described and submitted to the District Engineer for approval. This program shall include all known pertinent and relevant information, including seismic and geologic data, water depth, drilling-fluid hydrostatic pressure, schematic diagram from rotary table to proposed conductor casing seat, and contingency plan for moving off location.

At all exploratory well locations, seismic data shall be obtained to determine the presence or absence of shallow geologic hazards or hydrocarbons. All seismic data shall be made available to the District Engineer, and an analysis of the geologic hazards shall be furnished with the Application for Permit to Drill.

- C. Conductor Casing. Before drilling below this string, at least one remotely controlled, annular-type blowout preventer, a diverter system as described in paragraph 2B above, and equipment for circulating the drilling fluid to the drilling structure or vessel shall be installed.
- D. Surface Casing. Before drilling below this string, the blowout-prevention equipment shall include a minimum of four remotely controlled, hydraulically operated blowout preventers, including two equipped with pipe rams, one with blind rams, and one annular-type blowout preventer. Subsea blowout-preventer stacks used with floating drilling vessels shall be equipped with blind-shear rams.
- E. Testing, Inspection and Operation.
  - (1) Pressure Tests. Ram-type blowout preventers and related control equipment shall be tested at the rated working pressure of the stack assembly, or at 70 percent of the minimum internal yield pressure of the casing, whichever is the lesser. Annular-type preventers shall be tested at 70 percent of these pressure requirements. All preventers shall first be tested at a low pressure of 200 to 300 psi (14.1 to 21.1 Kg/cm<sup>2</sup>). These tests shall be performed when the equipment is installed, before drilling out after each string of casing is set, not less than once each week while conducting drilling



operations, and following repairs that require disconnecting a pressure seal in the assembly.

The operator shall notify the District Engineer when initial pressure testing of the blowout prevention equipment that is installed on each string of casing is to be conducted, so that a Geological Survey representative may witness the test.

- (2) Actuation Tests. While drill pipe is in use, pipe-ram-type blowout preventers shall be actuated at least once a day to test proper functioning. Blind rams shall be actuated on each trip. Each control station shall be tested for operation each time the pipe is out of the hole but not more than once each day. Each control system shall alternately be tested to insure proper functioning. If either system is not functional, further drilling operations shall be suspended until that system becomes operable. The annular-type blowout preventers shall be actuated on the drill pipe at least once each week. The blowout-preventer control-manifolds and accumulator system shall be checked for proper operation during the daily closure tests. Any necessary equipment repair and replacement of control panel indicator lights shall be accomplished immediately. All choke manifold valves, kelly cocks, and drill pipe safety valves shall be operated daily. Operational tests of blowout-prevention equipment shall be at staggered intervals, to allow each crew to operate the equipment.
- (3) Inspection and Maintenance. All blowout-prevention system and marine risers and associated equipment shall be inspected and maintained in accordance with the manufacturer's recommended procedures. The blowout preventers shall be visually inspected during each trip and in no event less than once each day. Inspection of subsea installations may be accomplished by the use of television equipment.
- (4) Drills. All drilling personnel shall be indoctrinated in blowout-prevention procedures and be familiar with the blowout-prevention



equipment before starting work on the well. A blowout prevention drill shall be conducted weekly for each drilling crew to insure that all equipment is operational and that crews are trained properly to carry out emergency duties. These drills shall be performed during various drilling operations, such as drilling, running and pulling the drill string, and when out of the hole. All blowout-preventer tests and crew drills shall be recorded on the driller's log. The operator shall furnish current schedules of drills to the District Engineer so that a Geological Survey representative may witness any drill. Such a drill may be required by a Geological Survey representative at any time during the drilling operation. The drill shall include, as a minimum, 1) sounding of a warning signal, sometimes actuated by pit-level indicator or other automatic device; 2) withdrawing the kelly; 3) stopping the pump; 4) observing flow of mud from well; and 5) closing the well by operation of the blowout preventers.

3. Mud Program - General. The characteristics, use, and testing of drilling mud and the conduct of related drilling procedures shall be such as to insure the safe drilling of any well. Quantities of mud materials sufficient to insure well control shall be maintained readily accessible for use at drilling operation sites at all times while drilling operations are being conducted.

- A. Mud Control. Before starting out of the hole with drill pipe, the mud shall be properly conditioned. Proper conditioning requires either circulation with the drill pipe just off bottom to the extent that the annular volume is displaced, or proper documentation in the driller's log prior to pulling the drill pipe that: (1) there was no indication of influx of formation fluids prior to starting to pull the drill pipe from the hole, (2) the weight of the returning mud is not less than the weight of the mud entering the hole, and (3) other mud properties recorded on the daily drilling log are within the specified ranges at the stage of drilling the hole to perform their required functions. In those cases when the hole is circulated, the driller's log shall be so noted.



When coming out of the hole with drill pipe, the annulus shall be filled with mud before the mud level drops 100 feet (30.5 metres). A mechanical device for measuring the amount of mud required to fill the hole shall be utilized, and any time there is an indication of swabbing, or influx of formation fluids, the necessary safety devices and action shall be employed to control the well. The mud shall not be circulated and conditioned, except on or near bottom, unless well conditions prevent running the drill pipe back to bottom. The mud in the hole shall be circulated or reverse-circulated prior to pulling drill-stem test tools from the hole.

The hole shall be filled by accurately measured volumes of mud. The number of stands of drill pipe and drill collars that may be pulled between the times of filling the hole shall be calculated and posted. The number of barrels and pump strokes required to fill the hole for this designated number of stands of drill pipe and drill collars shall be posted. Posted well control procedures based on anticipated well conditions shall be readily available to the driller. Such procedures shall include: 1) the maximum casing pressure before controlling excess pressure by bleeding through the choke, and 2) the requirement that the drill pipe pressure shall be monitored during the bleeding procedure for well control.

An operable degasser shall be installed in the mud system prior to the commencement of drilling operations and shall be maintained for use throughout the drilling and completion of the well.

- B. Mud Quantities. The operator shall stipulate, in the application to drill, the minimum quantities of mud material to be maintained at the drill site for emergency use. This quantity shall not be less than the amount necessary to make a mud volume equal to twice the calculated capacity of the active downhole and surface mud system. In addition, the operator shall maintain an adequate volume of reserve mud in storage. The minimum quantity of weighting material to be maintained at the drill site shall be sufficient to overcome the highest anticipated formation pressure with a mud weight at least seven pounds per cubic foot greater than the weight required to overcome such



formation pressure. Drilling operations shall be suspended when the approved minimum quantities of mud material are not maintained.

C. Mud Monitoring Equipment. The following mud system monitoring equipment shall be installed (with derrick floor indicators) and used throughout the period of drilling operations after mud returns are established:

- (1) A volume totalizing type of recording mud pit level indicator to determine mud pit volume gains and losses. This indicator shall include a visual and audio warning device.
- (2) Mud return indicator to determine when returns have been obtained, or when they occur unintentionally and additionally to determine that returns essentially equal the pump discharge rate.
- (3) Mud volume measuring device for accurately determining mud volumes required to fill the hole on trips.
- (4) Continuous mud logging equipment shall be employed on all exploratory drilling operations. Gas detecting equipment shall be utilized to monitor the drilling mud returns on all drilling operations.
- (5) Hydrogen sulfide sensing equipment, capable of sensing a minimum of five parts per million of  $H_2S$  in air, shall be employed to monitor the air above the drilling mud return line at or near the shaker screen.

D. Mud Testing, Records, and Reports. Mud testing equipment shall be maintained on the drilling structure at all times. Mud tests shall be conducted in accordance with procedures outlined in API RP 13B "Recommended Practice for Standard Procedure for Testing Drilling Fluid," 6th Edition, April 1976 or subsequent revisions as approved by the Supervisor. Such test shall be conducted at least once each tour or more frequently as conditions warrant. All mud test records shall be available to a Geological Survey representative.



- (1) Mud test results, including tests on mud held in reserve, shall be recorded on the driller's log and reported to the District Engineer in any required periodic drilling report.
- (2) Mud log or continuous formation and hydrocarbon logging records shall be prepared on all exploratory wells, and a copy shall be furnished to the District Engineer. The log shall be a continuous one-sheet graphical representation of the well from the depth at which mud returns are first established to total depth except for wells drilled within proven fields where the logs required are only for the exploratory portion of the holes. It shall include the following information, as a minimum:
  - (a) Depth
  - (b) Drilling Rate
  - (c) Lithology
  - (d) Oil and Gas Analysis
    - (i) Oil
    - (ii) Mud Gas
    - (iii) Cuttings
  - (e) Remarks (as applicable)
    - (i) Description
    - (ii) Test Results
    - (iii) Mud Data
    - (iv) Surveys

#### 4. Well Control Surveillance and Training.

- A. Surveillance. From the time drilling operations are initiated and until the well is completed or abandoned, a member of the drilling crew or the supervisor shall



maintain rig floor surveillance at all times, unless the well is secured with blowout preventers or cement plugs.

- B. Training. Company and drilling-contractor on-site supervisory personnel shall have completed within the immediately preceding two years a well control training program approved by the Supervisor, which includes:

- (1) Abnormal pressure detection methods.
- (2) Well control operations, including kicks, lost circulation and trips.

The operator shall additionally require well-control training for drillers in addition to the required weekly blowout prevention drills. Written verification of compliance with these provisions shall be filed with the District Engineer. As standards for training are developed for all members of the drilling crew, they will be incorporated into this Order. Compliance shall be considered a prerequisite to approval of any drilling operation.

5. Directional Surveys. A well is considered straight if inclination does not exceed three degrees from the vertical. Inclination surveys shall be obtained on all straight wells at intervals not exceeding 500 feet (152.4 metres) during the normal course of drilling. A well is considered directional if drilling plans provide for its bottom hole location to be more than 250 feet (76.2 metres) from its surface location or if inclination exceeds three degrees from the vertical. Directional surveys giving both inclination and azimuth shall be obtained on all directional wells at intervals not exceeding 500 feet (152.4 metres) during the normal course of drilling and at intervals not exceeding 100 feet (30.5 metres) in all angle change portions of the hole.

Composite directional surveys shall be filed with the District Engineer. The interval shown will be from the bottom of conductor casing, or, in the absence of conductor casing, from the bottom of drive or structural casing to total depth. In calculating all surveys, a correction from true north to Lambert-Grid north shall be made after making the magnetic to true north correction.



6. Hydrogen Sulfide. When drilling operations are undertaken to penetrate reservoirs known or expected to contain hydrogen sulfide ( $H_2S$ ), or, if unknown upon encountering  $H_2S$ , the preventive measures and operating practices set forth in GSS-OCS-1, "Safety Requirements for Drilling Operations in a Hydrogen Sulfide Environment," February 1976, shall be followed.
7. Critical Operations and Curtailment Plans. Certain operations performed in drilling are more critical than others with respect to well control, fire, explosion, oil spills, and other discharge or emissions. These operations may occur during drilling, running casing, logging, drill stem testing, well completion, or wireline operations.

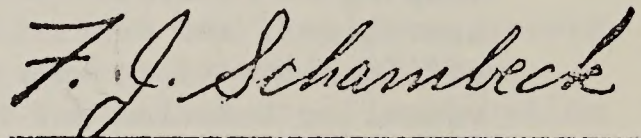
Each lessee or operator shall file with the District Engineer for approval a Critical Operations and Curtailment Plan for the lease, which shall contain:

- A. A list or description of critical drilling operations that are or are likely to be conducted on the lease. Such list or description shall specify the critical operations to be ceased, limited, or not to be commenced under given circumstances or conditions. The list shall include, but not be limited to, operations such as drilling in close proximity to another producing well; drill-stem testing; running and cementing casing; cutting and recovering casing; logging or wireline operations; well completion operations; and provision for moving drilling vessel off location in an emergency, to reposition vessel on location and reestablish entry into the well.
- B. A list or description of circumstances or conditions under which such critical operations shall be curtailed. This list or description shall be developed from all the factors and conditions relating to the conduct of operations on the lease, and shall consider but not necessarily be limited to whether the drilling operations are to be conducted from mobile or fixed platforms; the availability and capability of containment and cleanup equipment; abnormal or unusual characteristics expected to be encountered during drilling operations; spill control system response time; known or anticipated



meteorological or oceanographical conditions; availability of personnel and equipment for the particular operation to be conducted; and other factors peculiar to the particular lease under consideration.

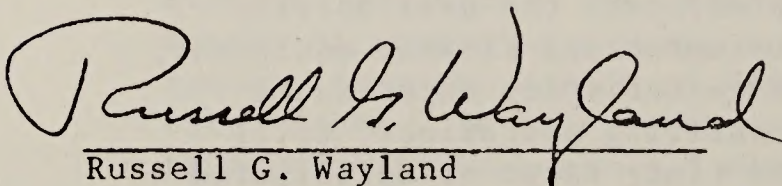
- C. When any such circumstances or conditions listed or described in the plan occur or other operational limits are encountered, the operator shall notify the District Engineer and shall curtail the critical operations as set forth under A. above. In the conduct of critical operations, full consideration shall be given to pertinent factors such as supply of well-control materials, subsurface conditions, inventory of spill-containment equipment, weather conditions, particular esthetic conditions, fire hazards, available transportation equipment, spill-control response time, and nature of work planned.
- D. Any deviation in the plan shall require prior approval by the District Engineer, except in case of an emergency in which event the District Engineer shall be notified as soon as possible.
- E. The lessee or operator shall review the plan at least annually. Notification of the review and any amendments or modifications to the plan shall be filed with the District office.



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F. J. Schambeck  
Oil and Gas Supervisor  
Pacific Area

Approved:



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Russell G. Wayland  
Chief, Conservation Division



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
BRANCH OF OIL AND GAS OPERATIONS  
PACIFIC REGION

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS  
LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC REGION

PLUGGING AND ABANDONMENT OF WELLS

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.15. The operator shall comply with the following minimum plugging and abandonment procedures which have general application to all wells drilled for oil and gas. Plugging and abandonment operations must not be commenced prior to obtaining approval from an authorized representative of the Geological Survey. Oral approvals shall be in accordance with 30 CFR 250.13. Any departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

1. Permanent Abandonment.

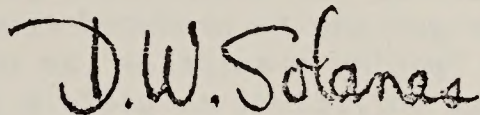
- A. Isolation in Uncased Hole. In uncased portions of wells, cement plugs shall be spaced to extend 100 feet below the bottom to 100 feet above the top of any oil, gas, and fresh water zones so as to isolate fluids in the strata in which they are found and to prevent them from escaping into other strata.
- B. Isolation of Open Hole. Where there is open hole (uncased and open into the casing string above) below the casing, a cement plug shall be placed in the deepest casing string by (1) or (2) below, or in the event lost circulation conditions exist or are anticipated, the plug may be placed in accordance with (3) below:
  - (1) A cement plug placed by displacement method so as to extend a minimum of 100 feet above and 100 feet below the casing shoe.
  - (2) A cement retainer with effective back pressure control set not less than 50 feet, nor more than 100 feet, above the casing shoe with a cement plug calculated to extend at least 100 feet below the casing shoe and 50 feet above the retainer.



- (3) A permanent type bridge plug set within 150 feet above the casing shoe with 50 feet of cement on top of the bridge plug. This plug shall be tested prior to placing subsequent plugs.
- C. Plugging or Isolating Perforated Intervals. A cement plug shall be placed opposite all open perforations (perforations not squeezed with cement) extending a minimum of 100 feet above and 100 feet below the perforated interval or down to a casing plug whichever is less. In lieu of the cement plug, a bridge plug set at a maximum of 150 feet above the open perforations of each separate interval with 50 feet of cement on top may be used provided the perforations are isolated from the hole below.
- D. Plugging of Casing Stubs. If casing is cut and recovered, thereby leaving a stub inside the next larger string, a cement plug will be set so as to extend 100 feet above and 100 feet below the stub, or a retainer set 50 feet above the stub with 150 feet of cement set below and 50 feet above. A permanent bridge plug set 50 feet above the stub and capped with 50 feet of cement shall be used if the foregoing methods cannot be used. However, if the stub is below the next larger string, plugging must be accomplished in accordance with subparagraph A and B above.
- E. Plugging of Annular Space. No annular space that extends to the ocean floor shall be left open to drilled hole below. If this condition exists, the annulus shall be plugged with cement.
- F. Surface Plug Requirement. A cement plug of at least 150 feet, with the top of the plug 150 feet or less below the ocean floor, shall be placed in the smallest string of casing which extends to the surface.
- G. Testing of Plugs. The setting and location of the first plug below the 150-foot surface plug shall be verified by placing the weight of the drill string or a minimum pipe weight of 15,000 pounds on the plug, whichever is greater. The top of plugs placed opposite open hole or perforations shall be verified as to location.



- H. Mud. Each of the respective intervals of the hole between the various plugs shall be filled with mud fluid of sufficient density to exert hydrostatic pressure exceeding the greatest formation pressure encountered while drilling such interval.
- I. Clearance of Location. All casing and anchor piling shall be severed and removed to at least 5 feet below the ocean floor and the ocean floor shall be cleared of any obstructions.
2. Temporary Abandonments. Any drilling well which is to be temporarily abandoned shall be mudded and cemented as required for permanent abandonment except for requirements of subparagraphs 1.E., F., and I. above. When casing extends above the ocean floor, a mechanical bridge plug (retrievable or permanent) shall be set in the casing between 15 and 200 feet below the ocean floor.

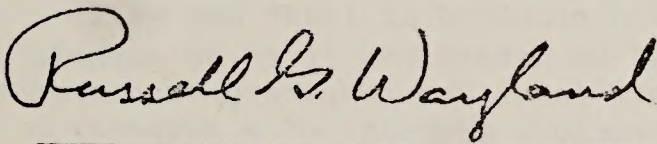


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D. W. Solanas

Supervisor

Approved: June 1, 1971



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Russell G. Wayland

Chief, Conservation Division



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
BRANCH OF OIL AND GAS OPERATIONS  
PACIFIC REGION

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS  
LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC REGION

SUSPENSIONS AND DETERMINATION OF WELL PRODUCIBILITY

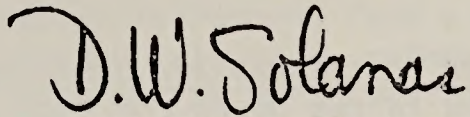
This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.12(d)(1). An OCS lease provides for extension beyond its primary term for as long as oil or gas may be produced from the lease in paying quantities. The term "paying quantities" as used herein means production in quantities sufficient to yield a return in excess of operating costs. An OCS lease may be maintained beyond the primary term, in the absence of actual production, when a suspension of production has been approved. Any application for suspension of production for an initial period shall be submitted prior to the expiration of the term of a lease. The Supervisor may approve a suspension of production provided at least one well has been drilled on the lease and he determines it to be capable of being produced in paying quantities. The temporary or permanent abandonment of a well will not preclude approval of a suspension of production as provided in 30 CFR 250.12(d)(1). Any departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

A well may be determined to be capable of producing in paying quantities when the requirements below have been met.

1. Oil Wells. A deliverability test of at least two hours' duration after the well flow has stabilized which proves that the well is capable of producing oil in paying quantities.
2. Gas Wells. A four-point back pressure test or a measured deliverability test of at least two hours' duration after the well flow has stabilized which proves that the well is capable of producing gas or gas and condensate in paying quantities.



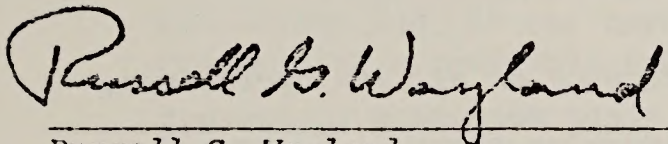
3. Witnessing and Results. All tests must be witnessed by an authorized representative of the Geological Survey. Test data accompanied by operator's affidavit, or third-party test data, may be accepted in lieu of a witnessed test provided prior approval is obtained from the appropriate district office. The results of the witnessed or accepted test must justify a determination that the well is capable of producing in paying quantities.



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D. W. Solanas  
Supervisor

Approved: June 1, 1971



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Russell G. Wayland  
Chief, Conservation Division



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
BRANCH OF OIL AND GAS OPERATIONS  
PACIFIC REGION

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS  
LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC REGION

INSTALLATION OF SUBSURFACE SAFETY DEVICE

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.41(b). Section 250.41(b) provides as follows:

- (b) Completed wells. In the conduct of all its operations, the lessee shall take all steps necessary to prevent blowouts, and the lessee shall immediately take whatever action is required to bring under control any well over which control has been lost. The lessee shall: (1) in wells capable of flowing oil or gas, when required by the supervisor, install and maintain in operating condition storm chokes or similar subsurface safety devices; (2) for producing wells not capable of flowing oil or gas, install and maintain surface safety valves with automatic shut-down controls; and (3) periodically test or inspect such devices or equipment as prescribed by the supervisor.

The operator shall comply with the following requirements. Any departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

1. All wells capable of flowing oil or gas shall be equipped with a subsurface safety device installed at a depth of 100 feet or more below the ocean floor. Such device shall be installed in all oil and gas wells, including artificial lift wells, unless proof is provided to the Supervisor that such wells are incapable of any natural flow. For shut-in wells capable of flowing oil or gas, a tubing plug may be installed, in lieu of a subsurface safety device, and such plug shall be installed when required by the Supervisor.
2. Subsurface safety devices shall be adjusted, installed, and maintained to insure reliable operation. Each subsurface safety device and tubing plug installed in a well shall be



tested at intervals not exceeding 6 months. Where a safety valve is set in a landing nipple and is of the type that is controlled from the surface by a hydraulic line or other means, the valve may be tested from the surface to insure proper functioning. If the valve does not operate properly it shall be removed, repaired, reinstalled or replaced and again checked for proper operation.

When a subsurface safety device is removed from a well for repair or replacement, a standby subsurface safety device or tubing plug shall be available at the well location. In the event of an emergency such device shall be immediately installed within the limits of practicability, consideration being given to time, equipment, and personnel safety.

Subsurface safety devices that are an integral part of the tubing string shall be tested at intervals not exceeding six months and, if the test is unsatisfactory, shall be replaced or a removable subsurface device shall be installed.

All wells in which a subsurface safety device or tubing plug is installed shall have the tubing-casing annulus sealed below the valve or plug setting depth.

3. In all tubing installations made after the effective date of this Order, the tubing string shall be equipped with a surface-controlled subsurface safety device. In high-flow-rate wells or wells producing sand, areas of turbulence above and below such devices shall be protected by flow couplings or other protective equipment. Wells which are presently equipped with direct-controlled subsurface safety devices shall have surface-controlled subsurface safety devices installed the first time the tubing is pulled after the effective date of this Order, or within one year after the effective date of this Order, whichever occurs sooner. The control system for the surface-controlled subsurface safety devices shall be an integral part of the platform shut-in system.
4. The well completion report on Form 9-330 and any subsequent report of workover on Form 9-331 shall state the type and the depth of the subsurface safety device or tubing plug installed in the well or state that the requirement has been waived.



5. The operator shall maintain records, available at a structure in the field to any authorized representative of the Geological Survey, showing the present status and past history of each subsurface safety device or tubing plug, including dates and details of inspection, testing, repairing, adjustment and reinstallation or replacement. The operator shall submit a copy of such records semiannually to the District Engineer.

D.W. Solanas

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Supervisor

Approved: June 1, 1971

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LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC REGION

PROCEDURE FOR COMPLETION OF OIL AND GAS WELLS

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.92. Any departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

1. Wellhead Equipment and Testing Procedures.

- A. Wellhead Equipment. All completed wells shall be equipped with casingheads, wellhead fittings, valves, and connections with a rated working pressure equal to or greater than the surface shut-in pressure of the well. Connections and valves shall be designed and installed to permit fluid to be pumped between any two strings of casing. Two master valves shall be installed on the tubing in wells with a surface pressure in excess of five thousand pounds per square inch. All wellhead connections shall be assembled and tested, prior to installation, by a fluid pressure which shall be equal to 1.5 times the rated working pressure of the fitting to be installed.
- B. Testing Procedure. Any wells showing sustained pressure on the casinghead, or leaking gas or oil between the production casing and the next larger casing string, shall be tested in the following manner: The well shall be killed with water or mud and pump pressure applied to the production casing string. Should the pressure at the casinghead reflect the applied pressure, corrective measures must be taken and the casing shall again be tested in the same manner. This testing procedure shall be used when the origin of the pressure cannot be determined otherwise.



2. Subsurface Safety Device. All completed wells shall meet the requirements prescribed in OCS Order No. 5.

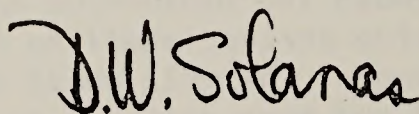
3. Procedures for Multiple or Tubingless Completions.

A. Multiple Completions.

- (1) Information shall be submitted on, or attached to, Form 9-331 showing top and bottom of all zones proposed for completion or alternate completion, including a partial electric log and a diagrammatic sketch showing such zones and equipment to be used.
- (2) When zones approved for multiple completion become intercommunicated the lessee shall immediately repair and separate the zones after approval is obtained.

B. Tubingless Completions.

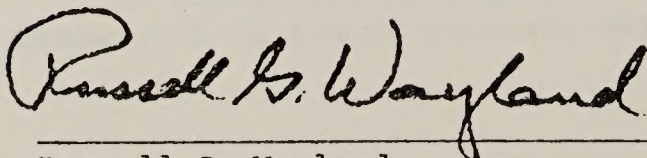
- (1) All tubing strings in a multiple completed well shall be run to the same depth below the deepest producible zone.
- (2) The tubing string(s) shall be new pipe or equivalent and shall be cemented with a sufficient volume to extend a minimum of 500 feet above the uppermost producible zone.
- (3) A temperature or cement bond log shall be run in all tubingless completion wells where lost circulation or other unusual circumstances occur during the cementing operations.
- (4) Information shall be submitted on, or attached to, Form 9-331 showing the top and bottom of all zones proposed for completion or alternate completion, including a partial electric log and a diagrammatic sketch showing such zones and equipment to be used.



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D. W. Solanas  
Supervisor

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NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS  
LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC REGION

POLLUTION AND WASTE DISPOSAL

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.43. Section 250.43 provides as follows:

- (a) The lessee shall not pollute land or water or damage the aquatic life of the sea or allow extraneous matter to enter and damage any mineral- or water-bearing formation. The lessee shall dispose of all liquid and non-liquid waste materials as prescribed by the supervisor. All spills or leakage of oil or waste materials shall be recorded by the lessee and, upon request of the supervisor, shall be reported to him. All spills or leakage of a substantial size or quantity, as defined by the supervisor, and those of any size or quantity which cannot be immediately controlled also shall be reported by the lessee without delay to the supervisor and to the Coast Guard and the Regional Director of the Federal Water Pollution Control Administration. All spills or leakage of oil or waste materials of a size or quantity specified by the designee under the pollution contingency plan shall also be reported by the lessee without delay to such designee.
- (b) If the waters of the sea are polluted by the drilling or production operations conducted by or on behalf of the lessee, and such pollution damages or threatens to damage aquatic life, wildlife, or public or private property, the control and total removal of the pollutant, wheresoever found, proximately resulting therefrom shall be at the expense of the lessee. Upon failure of the lessee to control and remove the pollutant the supervisor, in cooperation with other appropriate agencies of the Federal, State and local governments, or in cooperation with the lessee, or both, shall have the right to accomplish the control and removal of the pollutant in accordance with any established contingency plan for combating oil spills or by other means at the cost of the lessee. Such action shall not relieve the lessee of any responsibility as provided herein.



- (c) The lessee's liability to third parties, other than for cleaning up the pollutant in accordance with paragraph (b) of this section, shall be governed by applicable law.

The operator shall comply with the following requirements. Any departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

1. Pollution Prevention. In the conduct of all oil and gas operations, the operator shall not pollute land or water. The operator shall comply with the following pollution prevention requirements.

A. Liquid Disposal.

- (1) The disposal of produced waste water and sewage shall be in accordance with the provisions of OCS Order No. 8.
- (2) Oil shall not be disposed of into ocean waters.
- (3) Liquid waste materials containing substances which may be harmful to aquatic life or wildlife, or injurious in any manner to life or property, shall be treated to avoid disposal of harmful substances into the ocean waters.
- (4) Drilling mud containing oil or toxic substances shall not be disposed of into the ocean waters.

B. Solid Waste Disposal.

- (1) Drill cuttings, sand, and other solids containing oil shall not be disposed of into the ocean waters.
- (2) Mud containers and other solid waste materials shall be transported to shore for disposal.

C. Production Facilities.

- (1) All production facilities, such as separators, tanks, treaters, and other equipment, shall be operated and maintained at all times in a manner necessary to prevent pollution.



- (2) The operator's personnel shall be thoroughly instructed in the techniques of equipment maintenance and operation for the prevention of pollution. Non-operator personnel shall be informed in writing, prior to executing contracts, of the operator's obligations to prevent pollution.

2. Inspections and Reports. The operator shall comply with the following pollution inspection and reporting requirements and operators shall comply with such instructions or orders as are issued by the Supervisor for the control or removal of pollutants:

A. Pollution Inspections.

- (1) Manned drilling and production facilities shall be inspected daily to determine if pollution is occurring. Such maintenance or repairs as are necessary to prevent pollution of ocean waters shall be immediately undertaken and performed.
- (2) Unattended facilities, including those equipped with remote control and monitoring systems, shall be inspected at intervals as prescribed by the District Engineer and necessary maintenance or repairs immediately made thereto.

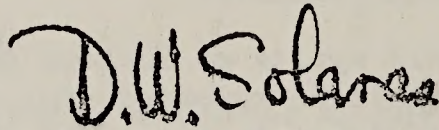
B. Pollution Reports.

- (1) All spills or leakage of oil and liquid pollutants shall be reported orally without delay to the District Engineer and the Coast Guard and shall be followed by a written report to the District Engineer showing the cause, size of spill, and action taken.
- (2) All spills or leakage of oil and liquid pollutants of a substantial size or quantity and those of any size or quantity which cannot be immediately controlled, shall be reported orally without delay to the Supervisor, the District Engineer, the Coast Guard, and the Regional Director, Environmental Protection Agency.
- (3) Operators shall notify each other upon observation of equipment malfunction or pollution resulting from another's operation.



3. Control and Removal.

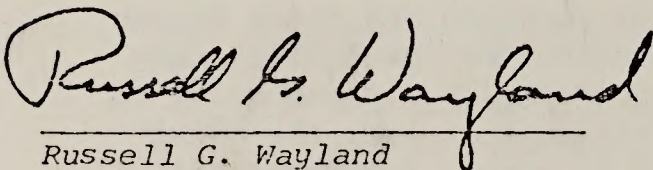
- A. Corrective Action. Immediate corrective action shall be taken in all cases where pollution has occurred. Each operator shall have an emergency plan for initiating corrective action to control and remove pollution and such plan shall be filed with the Supervisor. Corrective action taken under the plan shall be subject to modification when directed by the Supervisor.
- B. Equipment. Standby pollution control equipment shall be maintained at each operation or shall be immediately available to each operator at an onshore location. This equipment shall include, but need not be limited to, containment booms, skimming apparatus, and chemical dispersants and shall be available prior to the commencement of operations. This equipment shall be the most effective available resulting from the current state of pollution control and removal research and development efforts. The equipment shall be regularly inspected and maintained in good condition for use. The equipment and the location of land bases shall be approved by the Supervisor. Chemical dispersants shall not be used without prior approval of the Supervisor. The operator shall notify the Supervisor of the location at which such equipment is located for operations conducted on each lease. All changes in location and equipment maintained at each location shall be approved by the Supervisor.



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D. W. Solanas  
Supervisor

Approved: June 1, 1971



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NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS  
LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC REGION

APPROVAL PROCEDURE FOR INSTALLATION AND OPERATION OF PLATFORMS,  
FIXED AND MOBILE STRUCTURES, AND ARTIFICIAL ISLANDS

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.19(a). Section 250.19(a) provides as follows:

- (a) The supervisor is authorized to approve the design, other features, and plan of installation of all platforms, fixed structures, and artificial islands as a condition of the granting of a right of use or easement under paragraph (a) or (b) of section 250.18 or authorized under any lease issued or maintained under the Act.

Platforms, fixed structures and artificial islands are hereinafter referred to as structures. The operator shall be responsible for compliance with the requirements of this Order in the installation and operation of all platforms, fixed and mobile structures, and artificial islands, including all facilities installed on a structure whether or not operated or owned by the operator. The requirements of subparagraphs 2.A.(3), (4), (8), and (9) of this Order shall apply to all mobile drilling structures used to conduct drilling or workover operations on Federal leases in the Pacific Region.

Any departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

- 1. The following requirements are applicable to all structures approved and installed subsequent to the effective date of this Order, and to all structures when structural and equipment modifications are to be made:

- A. General Design. The design of structures shall include consideration of such factors as water depth, surface



and subsurface soil conditions, wave and current forces, wind forces, total equipment weight, seismic forces, and other pertinent geological, geographical, environmental, and operational conditions. At the discretion of the Supervisor, the operator may first obtain preliminary approval of the design of the structure by submitting general specifications which will demonstrate that a satisfactory installation can be designed. The operator may then proceed with detailed design work for final approval which shall comply with the requirements listed below.

B. Application. The operator shall submit in duplicate, for approval, the following to the appropriate District Office.

(1) Design Features. Information relative to design features on a plat or plats showing the structure dimensions, plan and two elevations, number and location of well slots, and water depth. In addition, the plat shall include:

(a) Nominal size and thickness range of piling.

(b) Nominal size and thickness range of jacket column leg.

(c) Nominal size and thickness range of deck column leg.

(d) Design piling penetration.

(e) Maximum bearing and lateral load per pile in tons.

(f) Identification data which shall be the OCS lease number, the structure designation, and the name of the lease operator.

(g) The following certification signed and dated with the title of the company representative:

" \_\_\_\_\_ certifies that this structure has been certified by a registered professional engineer and that the structure is designed to withstand the specific stresses and conditions outlined in subparagraph 1.A. and as detailed in subparagraph 1.B.(2)(g) of OCS Order No. 8 and will be constructed, operated, and maintained as described in the application, and any approved modification thereto. Certified plans are on file at \_\_\_\_\_."



(2) Other Features. Information relative to other features including the following:

- (a) Primary use intended, including drilling and/or production of oil and gas.
- (b) Personnel and personnel transfer facilities, including living quarters, boat landings, and heliport.
- (c) Type of deck, such as steel sheeting or open grating, and whether coated with protective material.
- (d) Method of protection from corrosion.
- (e) Production facilities including separators, treaters, storage tanks, compressors, line pumps, and metering devices, except that when initially designed and utilized for drilling, this information may be submitted prior to installation.
- (f) Safety and pollution control equipment and features.
- (g) The design parameters used and the maximum stresses for which designed in terms of the specific forces and conditions outlined in subparagraph 1.A. above.
- (h) Other information when required.

C. Certified Plan. Detailed structural plans certified by a registered professional engineer shall be on file and maintained by the operator or his designee.

2. Safety and Pollution Control Equipment and Procedures.

A. The following requirements shall apply to all structures. Subparagraphs 2.A.(3), (4), (8), and (9) shall also apply to mobile drilling structures. Operators of existing structures, including mobile drilling structures, shall have 90 days from the date of this Order in which to comply with the requirements of subparagraphs 2.A.(1) through (8) and one year in which to comply with subparagraph 2.A.(9).

- (1) The following devices shall be installed and maintained in an operating condition on all pressurized vessels and water separation facilities when such vessels and separation facilities are in service. The operator shall maintain records on the structure or facility showing the present status and past history of each such device including



dates and details of inspection, testing, repairing, adjustment, and reinstallation or replacement.

- (a) All separators shall be equipped with high-low pressure shut-in sensors, low level shut-in controls, and a relief valve. High liquid level control devices shall be installed when the vessel can discharge to a gas vent line.
- (b) All pressure surge tanks shall be equipped with a high and low pressure shut-in sensor, a high level shut-in control, gas vent line, and relief valve.
- (c) Atmospheric surge tanks shall be equipped with a high level shut-in sensor.
- (d) All other hydrocarbon handling pressure vessels shall be equipped with high-low pressure shut-in sensors, high-low level shut-in controls, and relief valves, unless they are determined by the Supervisor to be otherwise protected.
- (e) Pilot-operated pressure relief valves shall be equipped to permit testing with an external pressure source. Spring-loaded pressure relief valves shall either be bench-tested or equipped to permit testing with an external pressure source. A relief valve shall be set no higher than the designed working pressure of the vessel. The high pressure shut-in sensor shall be set no higher than 5% below the rated or designed working pressure and the low pressure shut-in sensor shall be set no lower than 10% below the lowest pressure in the operating pressure range on all vessels with a rated or designed working pressure of more than 400 psi. On lower pressure vessels the above percentages shall be used as guidelines for sensor settings considering pressure and operating conditions involved; except that sensor settings shall not be within 5 psi of the rated or designed working pressure or the lowest pressure in the operating pressure range.



- (f) All pressure-operated sensors shall be equipped to permit testing with an external pressure source.
  - (g) All gas vent lines shall be equipped with a scrubber or similar separation equipment.
- (2) The following devices shall be installed and maintained in an operating condition at all times when the affected well (or wells) is producing. The operator shall maintain records on the structure or facility showing the present status and past history of each such device, including dates and details of inspection, testing, repairing, adjustment, and reinstallation or replacement.
- (a) All well head assemblies shall be equipped with an automatic fail-close valve. Automatic safety valves temporarily out of service shall be flagged.
  - (b) All flowlines from wellheads shall be equipped with high-low pressure sensors located close to the wellhead. The pressure sensors shall be set to activate the wellhead valve in the event of abnormal pressures in the flowline.
  - (c) All headers shall be equipped with check valves on the individual flowlines. The flowline and valves from each well located upstream of, and including, the header valves shall withstand the shut-in pressure of that well, unless protected by a relief valve with connections to bypass the header. If there is an inlet valve to a separator, the valve, flowline, and all equipment upstream of the valve shall also withstand shut-in wellhead pressure, unless protected by a relief valve with connections to bypass the header.
  - (d) All pneumatic, hydraulic, and other shut-in control lines shall be equipped with fusible material at strategic points.
  - (e) Remote shut-in controls shall be located on the helicopter deck and all exit stairway landings leading to the helicopter deck and to all boat landings. These controls shall be quick-operating devices.
  - (f) All pressure sensors shall be operated and tested for proper pressure settings monthly



for at least four months. At such time as the monthly results are consistent, a quarterly test shall be required for at least one year. If these results are consistent, a longer period of time between testing may then be approved by the Supervisor. In the event any testing sequence reveals inconsistent results, the monthly testing sequence shall be reinstituted. Results of all tests shall be recorded and maintained on a structure in the field.

- (g) All automatic wellhead safety valves shall be tested for operation weekly. All automatic wellhead safety valves shall be tested for holding pressure monthly. If these results are consistent, a longer period of time between pressure tests, not to exceed quarterly, may then be approved by the Supervisor. In the event that any pressure testing sequence, exceeding monthly, reveals inconsistent results, the monthly testing sequence shall be reinstituted. Results of all tests shall be recorded and maintained on a structure in the field.
- (h) Check valves shall be tested for holding pressure monthly for at least four months. At such time as the monthly results are satisfactory, a quarterly test shall be required for at least one year. If these results are consistent, a longer period of time between testing may then be approved by the Supervisor. In the event any testing sequence reveals inconsistent results, the monthly testing sequence shall be reinstituted. Results of all tests shall be recorded and maintained on a structure in the field.
- (i) A complete testing and inspection of the safety system shall be witnessed by Geological Survey representatives at the time production is commenced. Thereafter, the operator shall arrange for a test every six months. The test shall be conducted when it can be witnessed by Geological Survey representatives.



- (j) A standard procedure for testing of safety equipment shall be prepared and posted in a prominent place on the platform.
- (3) Curbs, gutters, and drains shall be constructed and maintained in good condition in all deck areas in a manner necessary to collect all contaminants, unless drip pans or equivalent are placed under equipment and piped to a sump which will automatically maintain the oil at a level sufficient to prevent discharge of oil into the ocean waters. Alternate methods to obtain the same results may be approved by the Supervisor. These systems shall not permit spilled oil to flow into the wellhead area.
- (4) An auxiliary electrical power supply shall be installed to provide emergency power capable of operating all electrical equipment required to maintain safety of operation in the event the primary electrical power supply fails.
- (5) The following requirements shall apply to the handling and disposal of all produced waste water discharged into the ocean waters overlying the submerged lands of the OCS. The disposal of waste water other than into these waters shall be approved by the Supervisor.
  - (a) Water discharged shall not create conditions which will adversely affect the public health or the use of the waters for the propagation of aquatic life, recreation, navigation, or other legitimate uses.
  - (b) Waste water disposal systems shall be designed and maintained to reduce the oil content of the disposed water to not more than fifty ppm. An effluent sampling station shall be located at a point prior to discharge into the receiving waters where a representative sample of the treated effluent can be obtained. On one day each month the effluent shall be sampled hourly for 8 hours and the following determinations shall be made on the composite sample: suspended solids, settleable solids, pH, total oil and grease content, and volume of sample obtained. Also the temperature of each hourly sample shall be recorded. All



samples shall be taken and all analyses for oil and grease content shall be performed in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater", published by the American Public Health Association, Inc. The Supervisor may approve different methods for determination of oil and grease content if the method to be used is indicated to be reliable. A written report of the results shall be furnished to the Regional Office monthly. The report shall contain dates, time and location of sample, volumes of waste discharge on the date of sampling in barrels per day, and the results of the specific analysis and physical observations. A visual inspection of the appearance of the receiving waters in the discharge area shall be made daily and the results recorded and included in the monthly report.

(6) A firefighting system shall be installed and maintained in an operating condition in accordance with the following:

- (a) A fixed automatic water spray system shall be installed in all wellhead areas. These systems shall be installed in accordance with the current edition of National Fire Protection Association's Pamphlet No. 15.
- (b) A firewater system of rigid pipe with fire hose stations shall be installed and may include a fixed water spray system. Such a system shall be installed in a manner necessary to provide needed protection in areas where production handling equipment is located. A firefighting system using chemicals may be considered for installation in certain areas in lieu of a firewater system in that area, if determined by the Supervisor to provide equivalent fire protection control.
- (c) Pumps for the firewater systems shall be test-operated weekly. A record of the tests shall be maintained on a structure in the field and submitted semi-annually to the District Office. An alternate fuel or power source shall be installed to provide continued pump operation during platform shutdown unless an alternate firefighting system is provided.



- (d) Portable fire extinguishers shall be located in the living quarters and in other strategic areas.
  - (e) A diagram of the firefighting system showing the location of all equipment shall be posted in a prominent place on the structure and a copy submitted to the District Office.
- (7) An automatic gas detector and alarm system shall be installed and maintained in an operating condition in accordance with the following:
- (a) Gas detection systems shall be installed in all enclosed areas containing gas handling facilities or equipment and in other enclosed areas which are classified as hazardous areas as defined in API RP 500 A and B and the current edition of the National Electric Code.
  - (b) All gas detection systems shall be capable of continuously monitoring for the presence of combustible gas in the areas in which the detection devices are located.
  - (c) The central control shall be capable of giving an alarm at a point not higher than 60 percent of the lower explosive limit.
  - (d) The central control shall automatically activate shut-in sequences and emergency equipment at a point not higher than 90% of the lower explosive limit.
  - (e) An application for the installation and maintenance of any gas detection system shall be filed with the appropriate District Office for approval. The application shall include the following:
    - (i) Type, location, and number of detection or sampling heads.
    - (ii) Cycling, non-cycling, and frequency information.
    - (iii) Type and kind of alarm including emergency equipment to be activated.



- (iv) Method used for detection of combustible gas.
  - (v) Method and frequency of calibration.
  - (vi) A diagram of the gas detection system.
  - (vii) Other pertinent information.
- (f) A diagram of the gas detection system showing the location of all gas detection points shall be posted in a prominent place on the structure.
- (8) The following requirements shall be applicable to all electrical equipment and systems installed:
- (a) All gas and gasoline engines shall be equipped with low-tension ignition systems containing rigid connections and shielded wiring which shall prevent the release of sufficient electrical energy under normal or abnormal conditions to cause ignition of a combustible mixture.
  - (b) All electrical generators, motors, and lighting systems shall be installed, protected, and maintained in accordance with the current edition of the electrical code of the adjacent State, National Electric Code, and API RP 500 A and B, as appropriate. On mobile drilling structures, certificated by the Coast Guard, this equipment shall be installed, protected, and maintained in accordance with the applicable provisions of 46 CFR 110 through 113, inclusive.
  - (c) Marine-armored cable or metal-clad cable may be substituted for wire in conduit in any area.
- (9) Sewage disposal systems shall be installed and maintained in satisfactory operating condition in all cases where sewage is discharged into the ocean waters. Sewage is defined as human body wastes and the wastes from toilets and other receptacles intended to receive or retain body wastes. Following sewage treatment, the effluent shall contain 50 ppm or less of biochemical oxygen demand (BOD), 150 ppm or less of suspended solids, and shall have a minimum chlorine residual



of 1.0 mg/liter after a minimum retention time of fifteen minutes. Sewage treatment records shall be maintained and made available for inspection upon request. The records shall reflect the results of monthly tests. These tests shall include determination of BOD, suspended solids, and chlorine residual.

B. Welding Practices and Procedures. The following requirements shall apply to all structures, including mobile drilling structures, as applicable. The period of time during which these requirements are considered applicable to mobile drilling structures is the interval from the drilling out of the shoe of the conductor casing until the BOP stack and the marine riser are pulled in the process of final abandonment or suspension. For the purpose of this Order the term "welding and burning" is defined to include arc or acetylene welding and arc or acetylene cutting.

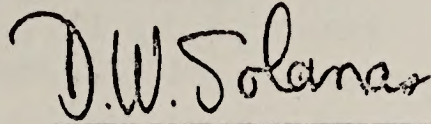
- (1) All welding and burning shall be minimized.
- (2) Such welding or burning as is necessary, on a structure, shall adhere to the following practices:
  - (a) Welding or burning on the structure should be done in an approved, properly functioning welding room; however, all welding and burning that is required but that cannot be prudently done in the welding room, shall be performed in compliance with the procedures outlined below.
  - (b) Prior to the commencement of any burning or welding operations, on a structure, the senior person in charge at the installation shall personally inspect the area in which the work is to be done. After this person has determined that it is safe to proceed, he shall issue a written authorization for the work. If both drilling and production operations are being conducted on the structure, the senior drilling man and the senior production man shall make this inspection and both shall sign it.



- (c) A copy of each welding or burning authorization shall be maintained on the structure for a period of one year. These authorizations shall be made available, for inspection, to any authorized representative of the Geological Survey.
- (d) During all welding or burning operations, one or more persons as necessary shall be designated as a "fire watch". Persons assigned to "fire watch" shall have no other duties while so assigned.
- (e) The "fire watch" shall wear an item of distinctive clothing (vest or coat) for identification purposes and shall have in his immediate possession a portable gas detector and a portable fire extinguisher.
- (f) If welding or burning must be done on containers, tanks, or other vessels which have contained a flammable substance, these objects shall be thoroughly cleaned and rendered free of such flammable substance before the work begins.
- (g) If welding or burning must be done on in-service or connected-up piping, that section of pipe shall be isolated by tightly closed valves, blind flanges, or other suitable means, bled to atmospheric pressure, and thoroughly purged and cleaned to render it free of any flammable substance.
- (h) If welding or burning must be done in confined spaces, the space shall be adequately vented and a continuous source of fresh air shall be supplied while work is in progress. If the fresh air is supplied by blowers, they shall be so positioned that the intakes will not pick up exhausted gases, fumes, or vapors.
- (i) If any welding or burning is done on bulkheads, decks, or overheads, the adjacent, overlying, or underlying spaces shall be examined to determine that it is safe for the work to proceed. If deemed advisable, a second "fire watch" shall be employed in the contiguous area.



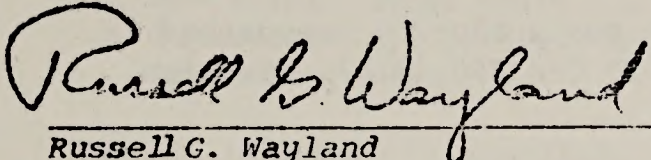
- (j) If any welding or burning must be done on structural members, it shall be determined by a competent authority that such welding or burning does not endanger the integrity of the structure.



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D. W. Solanas  
Supervisor

Approved: June 1, 1971



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Russell G. Wayland  
Chief, Conservation Division



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
BRANCH OF OIL AND GAS OPERATIONS  
PACIFIC REGION

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS  
LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC REGION

APPROVAL PROCEDURE FOR PIPELINES

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.19(b). Section 250.19(b) provides as follows:

- (b) The supervisor is authorized to approve the design, other features, and plan of installation of all pipelines for which a right of use or easement has been granted under paragraph (c) of section 250.18 or authorized under any lease issued or maintained under the act, including those portions of such lines which extend onto or traverse areas other than the Outer Continental Shelf.

The operator shall comply with the following requirements. Platforms, fixed structures, and artificial islands are hereinafter referred to as structures. This Order does not apply to common carrier pipelines except as to that portion connected to or crossing a structure. Any departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

1. General Design. All pipelines shall be designed and maintained in accordance with the following:
  - A. The operator shall be responsible for the installation of the following control devices on all oil and gas pipelines connected to a structure, including pipelines which are not operated or owned by the operator. Operators of structures installed prior to the effective date of this Order shall comply with the requirements of subparagraphs (1) through (6) within 6 months of the effective date of this Order. The operator shall maintain records on the structure or facility showing the present status and past history of each device, including dates and details of inspection, testing, repairing, adjustment, reinstallation or replacement.



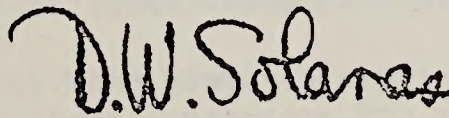
- (1) All oil and gas pipelines leaving a structure receiving production from the structure shall be equipped with a high-low pressure sensor to shut in the wells on the structure.
  - (2) All oil and gas pipelines delivering production to either offshore or onshore production facilities, or both, shall be equipped with an automatic shut-in valve, at or near the receiving facility, connected to an automatic and a remote shut-in system.
  - (3) All oil and gas pipelines coming onto a structure or delivering production to an onshore facility shall be equipped with a check valve or a quick-operating manual valve, as approved by the Supervisor, at or near the structure or facility to control backflow.
  - (4) All oil and gas pipelines crossing a structure which do not deliver production to the structure, but which may or may not receive production from the structure, shall be equipped with sensors to activate an automatic shut-in valve to be located in the upstream portion of the pipeline at or near the structure to avoid uncontrolled flow at the structure. This automatic shut-in valve shall be connected to either the structure automatic and remote shut-in system or to an independent remote shut-in system.
  - (5) All oil pumps and gas compressors shall be equipped with high-low pressure shut-in devices.
  - (6) All oil pipelines shall have a metering system to provide a continuous volumetric comparison of input to the line at the structure, or structures, with deliveries onshore. The system shall include an alarm system and shall be of adequate sensitivity to detect significant variations between input and discharge volumes. In lieu of the foregoing, any system capable of detecting small leaks in the pipeline may be substituted with the approval of the Supervisor.
- B. All oil and gas and other pipelines shall be protected from loss of metal that would endanger the strength and safety of the lines by methods such as protective coatings or cathodic protection.



- C. All oil and gas and other pipelines shall be installed and maintained to be compatible with trawling operations and other uses.
  - D. All oil and gas and other pipelines shall be hydrostatically tested to 1.25 times the designed working pressure for a minimum of 2 hours prior to placing the line in service.
  - E. All oil and gas pipelines shall be maintained in good operating condition at all times and the ocean surface above the pipeline shall be inspected a minimum of once each week for indication of leakage using aircraft, floating equipment or other means. Records of these inspections including the date, methods, and results of each inspection shall be maintained by the operator and submitted to the District Engineer annually by April 1. The operator shall immediately notify the District Engineer of any pipeline leak and within one week shall submit a report to him with respect to the cause, effect, and remedial action taken.
  - F. All oil and gas and other pipelines shall be designed and maintained for protection against water currents, storm scouring, soft bottoms, and other environmental factors.
  - G. An external inspection of all pipelines by side scan sonar or other means acceptable to the Supervisor shall be made at least once each year to identify all exposed portions of pipelines. All exposed portions of pipelines shall then be inspected in detail by photographic or other means acceptable to the Supervisor to determine if any hazards exist to the line or other users of the area. If a hazard is found to exist, appropriate corrective action shall be taken. Records of these inspections including the date, methods, and results of each inspection, shall be maintained by the operator and submitted to the District Engineer when the records become available.
2. Application. The operator shall submit in duplicate the following to the District Engineer for forwarding and approval by the Supervisor:
- A. Drawing on a plat or plats showing the major features and other pertinent data including: (1) water depth, (2) route, (3) location, (4) length, (5) connecting facilities, (6) size, and (7) burial depth, if buried.

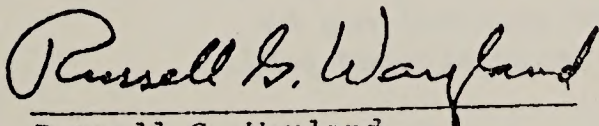


- B. A schematic drawing showing the location of the following pipeline safety equipment and the manner in which the equipment functions: (1) high-low pressure sensors, (2) automatic shut-in valves, (3) check valves, and (4) the volumetric metering system.
- C. General information concerning the pipeline including the following:
- (1) Product or products to be transported by the pipeline.
  - (2) Size, weight and grade of the pipe.
  - (3) Length of line.
  - (4) Maximum water depth.
  - (5) Type or types of corrosion protection.
  - (6) Description of protective coating.
  - (7) Bulk specific gravity of line (with the line empty).
  - (8) Anticipated gravity or density of the product or products.
  - (9) Design working pressure and capacity.
  - (10) Maximum working pressure and capacity.
  - (11) Hydrostatic pressure and hold time to which the line will be tested after installation.
  - (12) Size and location of pumps and prime movers.
  - (13) Any other pertinent information as the Supervisor may prescribe.
3. Completion Report. The operator shall notify the District Engineer when installation of the pipeline is completed and submit a drawing, in duplicate, showing the location of the line as installed, accompanied by all hydrostatic test data, including procedure, test pressure, hold time, and results.



D. W. Solanas  
Supervisor

Approved: June 1, 1971



Russell G. Wayland  
Chief, Conservation Division



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
BRANCH OF OIL AND GAS OPERATIONS  
PACIFIC REGION

NOTICE TO PERMITTEES OF TWIN CORE HOLE PERMITS  
IN THE OUTER CONTINENTAL SHELF, PACIFIC REGION

DRILLING OF TWIN CORE HOLES

The Secretary of the Interior on November 3, 1965, approved the drilling of core holes on unleased lands of the Outer Continental Shelf off the coast of Southern California (30 Federal Register No. 218, Nov. 10, 1965). Authority was delegated to the Regional Oil and Gas Supervisor of the U. S. Geological Survey to approve the drilling of such wells provided (1) the core hole to be drilled is located within 100 feet of a well heretofore drilled under a State permit, or such greater distance from such a well as the Supervisor may prescribe where the prior drilled well is less than three geographical miles from the coastline, (2) the maximum depth to which a core hole may be drilled shall be the depth of the prior drilled well, (3) the approvals to drill core holes granted by the Supervisor shall be conditioned upon compliance with the regulations in 30 CFR Part 250, and such other reasonable requirements as he may prescribe, and (4) no approval to drill shall be granted until the applicant has posted an acceptable corporate surety bond in the amount prescribed in 43 CFR 3304.1, conditioned on compliance with all the requirements set forth in the permits to drill granted by the Supervisor.

In addition to the above, the permittee shall comply with the following requirements:

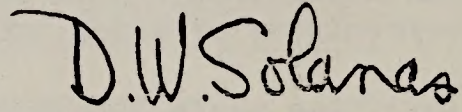
1. OCS Orders No. 1, 2, 3, 7, and 8 are hereby made applicable to core drilling operations.
2. An application for a general permit to conduct core drilling shall have been filed for approval prior to the filing of any applications to drill specific core holes.
3. A \$300,000 corporate surety bond (Form 3380-3) covering Pacific Coast OCS operations shall have been filed.
4. Each application to drill a core hole (Form 9-331C in triplicate) shall be held in an open file in the Supervisor's office for 15 days after filing before approval may be granted. Only the application shall be considered public information.



5. The permittee shall: (a) obtain or have a geological survey blanket permit from the State to drill core holes within State waters, (b) obtain appropriate permission from the Army Corps of Engineers for the location of drilling ships (as provided in the Secretary of the Interior's Notice in 18 FR No. 186, Sept. 23, 1953).
6. All core hole locations shall be described by the Lambert Coordinate System for reference purposes applicable to the location in which it falls.
7. In each application to drill a twin core hole, the original State-permitted core hole shall be identified.
8. The permittee shall file a statement as to the exact location of the surface of the approved core hole and certify that it is within 100 feet of the original core hole at such time as drilling commences.
9. No directionally drilled core holes will be permitted.
10. Mud log and gas detector equipment shall be in operation while drilling below the shoe of the surface casing on twinned holes and below the shoe of the conductor casing on core holes offsetting the three-mile line not being drilled as a twin.
11. No down-hole formation fluid sampling equipment shall be operated at any time.
12. Conventional coring will be permitted either to total approved depth or such lesser depth as prescribed by the Supervisor provided the permittee of the original core hole being twinned has not filed an affidavit with the Supervisor stating that no conventional coring had been conducted in the original core hole. Sidewall sample coring may be conducted in that part of the hole in which an electric log has been run. Upon completion of operations the permittee shall file with the Supervisor a duly attested duplicate copy of the contractor's original log (tour sheet).
13. The permittee shall advise the District Engineer, Geological Survey, at least 48 hours prior to the drilling and reaching of the approved total depth. The "measuring out" of drill pipe at total depth will be witnessed by the District Engineer or his representative.



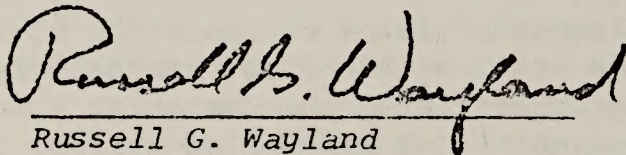
14. The permittee shall not commence any abandonment operations prior to obtaining written approval from the District Engineer, Geological Survey. Abandonment of the core hole and clearing of the location of all obstructions on the ocean floor shall be witnessed by a representative of the Geological Survey.
15. Such other requirements as shall be prescribed in the general permit or the specific approved core hole application, or at any time such additional requirements are deemed necessary by the Supervisor or his representative.



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D. W. Solanas  
Supervisor

Approved: June 1, 1971



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Russell G. Wayland  
Chief, Conservation Division



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
PACIFIC AREA

OCS ORDER NO. 11  
Effective May 1, 1975

OIL AND GAS PRODUCTION RATES,  
PREVENTION OF WASTE, AND  
PROTECTION OF CORRELATIVE RIGHTS

This Order is established pursuant to the authority prescribed in 30 CFR 250.1, 30 CFR 250.11, and in accordance with all other applicable provisions of 30 CFR Part 250, and the Notice appearing in the Federal Register, dated December 5, 1970 (35 FR 18559), to provide for the prevention of waste and conservation of the natural resources of the Outer Continental Shelf, and the protection of correlative rights therein. This Order shall be applicable to all oil and gas wells on Federal leases in the Outer Continental Shelf of the Pacific Area. All departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b). References in this Order to approvals, determinations, and requirements for submitting of information or applications for approval are to those granted, made, or required by the Oil and Gas Supervisor or his delegated representative.

1. Definition of Terms. As used in this Order, the following terms shall have the meanings indicated:

- A. Waste of Oil and Gas. The definition of waste appearing in 30 CFR 250.2(h) shall apply, and includes the failure to timely initiate enhanced recovery operations where such methods would result in an increased ultimate recovery of oil or gas under sound engineering and economic principles. Enhanced recovery operations refers to pressure maintenance operations, secondary and tertiary recovery, cycling, and similar recovery operations which alter the natural forces in a reservoir to increase the ultimate recovery of oil or gas.



- B. Correlative Rights. The opportunity afforded each lessee or operator to produce without waste his just and equitable share of oil and gas from a common source of supply.
- C. Maximum Efficient Rate (MER). The maximum sustainable daily oil or gas withdrawal rate from a reservoir which will permit economic development and depletion of that reservoir without detriment to ultimate recovery.
- D. Maximum Production Rate (MPR). The approved maximum daily rate at which oil may be produced from a specified oil well completion or the maximum approved daily rate at which gas may be produced from a specified gas well completion.
- E. Interested Party. The Operators and lessees, as defined in 30 CFR 250.2(f) and (g), of the lease or leases involved in any proceeding initiated under this Order.
- F. Reservoir. An oil or gas accumulation which is separated from and not in oil or gas communication with any other such accumulation.
- G. Competitive Reservoir. A reservoir as defined herein containing one or more producible or producing well completions on each of two or more leases, or portions thereof, in which the lease or operating interests are not the same.
- H. Property Line. A boundary dividing leases, or portions thereof, in which the lease or operating interest is not the same. The boundaries of federally approved unit areas shall be considered property lines. The boundaries dividing leased and unleased acreage shall be considered property lines for the purpose of this Order.
- I. Oil Reservoir. A reservoir that contains hydrocarbons predominantly in a liquid (single-phase) state.
- J. Oil Well Completion. A well completed in an oil reservoir or in the oil accumulation of an oil reservoir with an associated gas cap.



- K. Gas Reservoir. A reservoir that contains hydrocarbons predominantly in a gaseous (single-phase) state.
- L. Gas Well Completion. A well completed in a gas reservoir or in the gas cap of an oil reservoir with an associated gas cap.
- M. Oil Reservoir with an Associated Gas Cap. A reservoir that contains hydrocarbons in both a liquid and a gaseous state (two-phase).
- N. Producible Well Completion. A well which is physically capable of production and which is shut-in at the wellhead or at the surface, but not necessarily connected to production facilities, and from which the operator plans future production.

## 2. Classification of Reservoirs.

- A. Initial Classification. Each producing reservoir shall be classified by the operator, subject to approval by the Supervisor, as an oil reservoir, an oil reservoir with an associated gas cap, or a gas reservoir.
  - (1) The initial classification of each reservoir from which production is commenced subsequent to the date of this Order shall be submitted for approval with the initial submittal of MER data for the reservoir.
  - (2) Each reservoir from which production commenced on or prior to the date of this Order shall be classified by the operator, based on existing reservoir conditions. Such classification shall be determined and submitted to the Supervisor within six (6) months of the date of this Order.
- B. Reclassification. A reservoir may be reclassified by the Supervisor, on his own initiative or upon application of an operator, during its productive life when information becomes available showing that such reclassification is warranted.

## 3. Oil and Gas Production Rates.

- A. Maximum Efficient Rate (MER). The operator shall propose a maximum efficient rate (MER) for each producing reservoir based on sound engineering and economic principles. When approved at the proposed or other rate, such rate shall not be exceeded, except as provided in paragraph 4 of this Order.



- (1) Submittal of Initial MER. Within 45 days after the date of first production or such longer period as may be approved, the operator shall submit a Request for Reservoir MER (Form 9-1866) with appropriate supporting information. Within six months after the date of this Order, the operator shall submit a Request for Reservoir MER (Form 9-1866) with appropriate supporting information for each reservoir from which production commenced prior to the date of this Order.
- (2) Revision of MER. The operator may request a revision of an MER by submitting the proposed revision to the Supervisor on a Request for Reservoir MER (Form 9-1866) with appropriate supporting information. The operator shall obtain approval to produce at test rates which exceed an approved MER when such testing is necessary to substantiate an increase in the MER.
- (3) Review of MER. The MER for each reservoir will be reviewed by the operator annually, or at such other required or approved interval of time. The results of the review, with all current supporting information shall be submitted on a Request for Reservoir MER (Form 9-1866).
- (4) Effective Date of MER. The effective date of an MER, or revision thereof, will be determined by the Supervisor and shown on a Request for Reservoir MER (Form 9-1866) when the MER is approved. The effective date for an initial MER shall be the first day following the completion of an approved testing period. The effective date for a revised MER shall be the first day following the completion of an approved testing period, or if testing is not conducted, the date the revision is approved.

B. Maximum Production Rate (MPR). The operator shall propose a maximum production rate (MPR) for each producing well completion in a reservoir together with full information on the method used in its determination. When an MPR has been approved for a well completion, that rate shall not be exceeded, except as provided in paragraph 4 of this Order. The MPR shall be based on well tests and any limitations imposed by (1) well tubing, safety equipment, artificial lift equipment, surface back pressure, and equipment capacity; (2) sand producing problems, (3) producing gas-oil and water-oil ratios; (4) relative structural position of the well



with respect to gas-oil or water-oil contacts; (5) position of perforated interval within total production zone; and (6) prudent operating practices. The MPR established for each well completion shall not exceed 110 percent of the rate demonstrated by a well test unless justified by supporting information.

- (1) Submittal of Initial MPR. Within six months after the date of this Order, the operator shall submit a Request for Well Maximum Production Rate (MPR) (Form 9-1867), with the results of the potential test on a Well Potential Test Report (Form 9-1868). Thereafter, the operator shall have 30 days from the date of first continuous production within which to conduct a potential test, as specified under subparagraphs 5.B and 6.B of this Order, on all new and reworked well completions. Within 15 days after the date of the potential test, the operator shall submit a proposed MPR for the individual well completion on a Request for Well Maximum Production Rate (MPR) (Form 9-1867), with the results of the potential test on a Well Potential Test Report (Form 9-1868). Extension of the 30-day test period may be granted. The effective date for any approved initial MPR shall be the first day following the test period. During the 30-day period allowed for testing, or any approved extensions thereof, the operator may produce a new or reworked well completion at rates necessary to establish the MPR. The operator shall report the total production obtained during the test period and approved extensions thereof, on the Well Potential Test Report (Form 9-1868).
- (2) Revision of MPR Increase. If necessary to test a well completion at rates above the approved MPR to determine whether the MPR should be increased, notification of intent to test the well at such higher rates, not to exceed a stated maximum rate during a specified test period, shall be filed with the Supervisor. Such tests may commence on the day following the date of filing notification, unless otherwise ordered by the Supervisor. If an operator determines that the MPR should be increased he shall submit, within 15 days after the specified test period, a proposed increased MPR on a Request



for Well Maximum Production Rate (MPR) (Form 9-1867), and any other available data to support the requested revision, including the results of the potential test and the total production obtained during the test period on a Well Potential Test Report (Form 9-1868). Prior to approval of the proposed increased MPR, the operator may produce the well completion at a rate not to exceed the proposed increased MPR of the well. The effective date for any approved increased MPR shall be the first day following the test period. If testing rates or increased MPR rates result in production from the reservoir in excess of the approved MER, this excess production shall be balanced by underproduction from the reservoir under the provisions of subparagraph 4.B of this Order.

- (3) Revision of MPR Decrease. When the quarterly test rate for an oil well completion or the semi-annual test rate for a gas well completion required under subparagraphs 5.C and 6.C of this Order is less than 90 percent of the existing approved MPR for the well, a new reduced MPR will be established automatically for that well completion equal to 110 percent of the test rate submitted. The effective date for the new MPR for such well completion shall be the first day of the quarter following the required date of submittal of periodic well-test results under subparagraphs 5.C and 6.C of this Order. Also, the operator may notify the Supervisor on a Request for Well Maximum Production Rate (MPR) (Form 9-1867) of, or the Supervisor may require, a downward revision of a well MPR at any time when the well is no longer capable of producing its approved MPR on a sustained basis. The effective date for such reduced MPR for a well completion shall be the first day of the month following the date of notification.
- (4) Continuation of MPR. If submittal of the results of a quarterly well test for an oil completion or a semi-annual well test for a gas well completion, as provided for in subparagraphs 5.C and 6.C of this Order, cannot be timely, continuation of production under the last approved MPR for the well may be authorized, provided an extension of time in which to submit the test results is requested and approved in advance.



(5) Cancellation of MPR. When a well completion ceases to produce, is shut-in pending workover, or any other condition exists which causes the assigned MPR to be no longer appropriate, the operator shall notify the Supervisor accordingly on a Request for Well Maximum Production Rate (MPR) (Form 9-1867), indicating the date of last production from the well, and the MPR will be canceled. Reporting of temporary shut-ins by the operator for well maintenance, safety conditions, or other normal operating conditions is not required, except as is necessary for completion of the Monthly Report of Operations (Form 9-152).

C. MER and MPR Relationship. The withdrawal rate from a reservoir shall not exceed the approved MER and may be produced from any combination of well completions subject to any limitations imposed by the MPR established for each well completion. The rate of production from the reservoir shall not exceed the MER although the summation of individual well MPR's may be greater than the MER.

4. Balancing of Production.

A. Production Variances. Temporary well production rates, resulting from normal variations and fluctuations exceeding a well MPR or reservoir MER shall not be considered a violation of this Order, and such production may be sold or transferred pursuant to paragraph 8 of this Order. However, when normal variations and fluctuations result in production in excess of a reservoir MER, any operator who is overproduced shall balance such production in accordance with subparagraph 4.B below. Such operator shall advise the Supervisor of the amount of such excess production from the reservoir for the month at the same time as Form 9-152 is filed for that month.

B. Balancing Periods. As of the first day of the month following the month in which this Order becomes effective, all reservoirs shall be considered in balance. Balancing periods for overproduction of a reservoir MER shall end on January 1, April 1, July 1, and October 1 of each year. If a reservoir



is produced at a rate in excess of the MER for any month, the operator who is overproduced shall take steps to balance production during the next succeeding month. In any event, all overproduction shall be balanced by the end of the next succeeding quarter following the quarter in which the overproduction occurred. The operator shall notify the Supervisor at the end of the month in which he has balanced the production from an overproduced reservoir.

- C. Shut-in for Overproduction. Any operator in an overproduction status in any reservoir for two successive quarters which has not been brought into balance within the balancing period shall be shut-in from that reservoir until the actual production equals that which would have occurred under the approved MER.
- D. Temporary Shut-in. If, as the result of storm, hurricanes, emergencies, or other conditions peculiar to offshore operations, an operator is forced to curtail or shut-in production from a reservoir, the Supervisor may, on request, approve makeup of all or part of this production loss.

5. Oil Well Testing Procedures.

- A. General. Tests shall be conducted for not less than four consecutive hours. Immediately prior to the 4-hour test period, the well completion shall have produced under stabilized conditions for a period of not less than six consecutive hours. The 6-hour pretest period shall not begin until after recovery of a volume of fluid equivalent to the amount of fluids introduced into the formation for any purpose. Measured gas volumes shall be adjusted to the standard conditions of the 15.025 psia and 60° F. for all tests. When orifice meters are used, a specific gravity shall be obtained or estimated for the gas and a specific gravity correction factor applied to the orifice coefficient. The Supervisor may require a prolonged test or retest of a well completion if such test is determined to be necessary for the establishment of a well MPR or a reservoir MER. The Supervisor may approve test periods of less than four hours and pretest stabilization periods of less than six hours for well completions, provided that test reliability can be demonstrated under such procedures.



- B. Potential Test. Test data to establish or to increase an oil well MPR shall be submitted on a Well Potential Test Report (Form 9-1868). The total production obtained from all tests during the test period shall be reported on such form.
- C. Quarterly Test. Tests shall be conducted on each producing oil well completion quarterly, and test results shall be submitted on a Quarterly Oil Well Test Report (Form 9-1869). Testing periods and submittal dates shall be as follows:

<u>Testing Period</u>	<u>Latest Date for Submittal of Test Results</u>	<u>For Quarter Beginning</u>
September 11 - December 10	December 10	January 1
December 11 - March 10	March 10	April 1
March 11 - June 10	June 10	July 1
June 11 - September 10	September 10	October 1

There shall be a minimum of 45 days between quarterly tests for an oil well completion.

6. Gas Well Testing Procedures.

- A. General. Testing Procedures for gas well completions shall be the same as those specified for oil well completions in subparagraph 5.A except for the initial test which shall be a multi-point back-pressure test as described in paragraph 6.D.
- B. Potential Test. Test data to establish or to increase a gas well MPR shall be submitted on a Well Potential Test Report (Form 9-1868).
- C. Semi-annual Test. Tests shall be conducted on each producing gas well completion semi-annually, and test results shall be submitted on a Semi-annual Gas Well Test Report (Form 9-1870). Testing periods and submittal dates shall be as follows:

<u>Testing Period</u>	<u>For Submittal of Test Results</u>	<u>For Semi- Annual Period Beginning</u>
June 11 - December 10	December 10	January 1
December 11 - June 10	June 10	July 1

There shall be a minimum of 90 days between semi-annual tests for a gas well completion.



- D. Back-Pressure Tests. A multi-point back-pressure test to determine the theoretical open-flow potential of gas wells shall be conducted within thirty days after connection to a pipeline. If bottom-hole pressures are not measured, such pressures shall be calculated from surface pressures using the method, or other similar method, found in the Interstate Oil Compact Commission (IOCC) Manual of Back-Pressure Testing of gas wells. The results of all back-pressure tests conducted by the operator shall be filed with the Supervisor, including all basic data used in determining the test results. The Supervisor may waive this requirement if multi-point back-pressure test information has previously been obtained on a representative number of wells in a reservoir.
7. Witnessing Well Tests. The Supervisor may have a representative witness any potential or periodic well tests on oil and gas well completions. Upon request, an operator shall notify the appropriate District office of the time and date of well tests.
8. Sale or Transfer of Production. Oil and gas produced pursuant to the provisions of this Order, including test production, may be sold to purchasers or transferred as production authorized for disposal hereunder.
9. Bottom-Hole Pressure Tests. Static bottom-hole pressure test shall be conducted annually on sufficient key wells to establish an average reservoir pressure in each producing reservoir unless a different frequency is approved. The operator may be required to test specific wells. Results of bottom-hole pressure tests shall be submitted within 60 days after the date of the test.
10. Flaring and Venting of Gas. Oil- and gas-well gas shall not be flared or vented, except as provided herein.
- A. Small-Volume or Short-Term Flaring or Venting. Oil- and gas-well gas may be flared or vented in small volumes or temporarily without the approval of the Supervisor in the following situations:
- (1) Gas Vapors. When gas vapors are released from storage and other low pressure production vessels if such gas vapors cannot be economically recovered or retained.



- (2) Emergencies. During temporary emergency situations, such as compressor or other equipment failure, or the relief of abnormal system pressures.
- (3) Well Purging and Evaluation Tests. During the unloading or cleaning up of a well and during drillstem, producing, or other well evaluation tests not exceeding a period of 24 hours.
- B. Approval for Routine or Special Well Tests. Oil- and gas-well gas may be flared or vented during routine and special well tests, other than those described in paragraph A above, only after approval of the Supervisor.
- C. Gas-Well Gas. Except as provided in A and B above, gas-well gas shall not be flared or vented.
- D. Oil-Well Gas. Except as provided in A and B above, oil-well gas shall not be flared or vented unless approved by the Supervisor. The Supervisor may approve an application for flaring or venting of oil-well gas for periods not exceeding one year if (1) the operator has initiated positive action which will eliminate flaring or venting, or (2) the operator has submitted an evaluation supported by engineering, geologic, and economic data indicating that rejection of an application to flare or vent the gas will result in an ultimate greater loss of equivalent total energy than could be recovered for beneficial use from the lease if flaring or venting were allowed.
- E. Content of Application. Applications under paragraph D above for existing operations, as of the date of this Notice, shall be filed within three months from the effective date of this Order. Applications under paragraph D(2) above shall include all appropriate engineering, geologic, and economic data in an evaluation showing that absence of approval to flare or vent the gas will result in premature abandonment of oil and gas production or curtailment of lease development. Applications shall include an estimate of the amount and value of the oil and gas reserves that



would not be recovered if the application to flare or vent were rejected and an estimate of the total amount of oil to be recovered and associated gas that would be flared or vented if the application were approved.

11. Disposition of Gas. The disposition of all gas produced from each lease shall be reported monthly on, or attached to, Form 9-152. The report shall be submitted in the following manner:

	<u>Oil-Well Gas (MCF)</u>	<u>Gas-Well Gas (MCF)</u>
Sales	_____	_____
Fuel	_____	_____
*Injected	_____	_____
Flared	_____	_____
Vented	_____	_____
Other (Specify)	_____	_____
Total	_____	_____

\*Gas produced from the lease and injected on or off the lease.

12. Multiple and Selective Completions.

- A. Number of Completions. A well bore may contain any number of producible completions when justified and approved.
- B. Numbering Well Completions. Well completions made after the date of this Order shall be designated using numerical and alphabetical nomenclature. Once designated as a reservoir, or commingled reservoirs completion, the well completion number shall not change. Appendix A contains a detailed explanation of procedures for naming well completions.
- C. Packer Tests. Multiple and selective completions shall be equipped to isolate the respective producing reservoirs. A packer test or other appropriate reservoir isolation test shall be conducted prior to or immediately after initiating production and annually thereafter on all multiply completed wells. Should the reservoirs in any multiply completed well become intercommunicative the operator shall make repairs and again conduct reservoir isolation tests unless some other operational procedure is approved. The results of all tests shall be submitted on a Packer Test (Form 9-1871) within 30 days after the date of the test.



- D. Selective Completions. Completion equipment may be installed to permit selective reservoir isolation or exposure in a well bore through wireline or other operations. All selective completions shall be designated in accordance with subparagraph 12.B when the application for approval of such completions is filed.
- E. Commingling. Commingling of production from two or more separate reservoirs within a common well bore may be permitted if it is determined that, collectively, the ultimate recovery will not be decreased. An application to commingle hydrocarbons from multiple reservoirs within a common well bore shall be submitted for approval and shall include reservoir engineering data, and a schematic diagram of well equipment. For all competitive reservoirs, notice of the application shall be sent by the applicant to all other operators of interest in the reservoirs prior to submitting the application to the Supervisor. The application shall specify the well completion number to be used for subsequent reporting purposes.
13. Gas-Cap Well Completions. All existing and future wells completed in the gas cap of a reservoir which has been classified and approved as an associated oil reservoir shall be shut-in until such time as the oil is depleted or the reservoir is reclassified as a gas reservoir; provided, however, that production from such wells may be approved when (1) it can be shown that such gas-cap production would not lead to waste of oil and gas, or (2) when necessary to protect correlative rights unless it can be shown that this production will lead to waste of oil and gas.
14. Location of Wells.
- A. General. The location and spacing of all exploratory and development wells shall be in accordance with approved programs and plans required in 30 CFR 250.17 and 250.34. Such location and spacing shall be determined independently for each lease or reservoir in a manner which will locate wells in the optimum structural position for the most effective production of reservoir fluids and to avoid the drilling of unnecessary wells.



B. Distance from Property Line. An operator may drill exploratory or development wells at any location on a lease in accordance with approved plans; provided that no well drilled and completed after the date of this Order in which the completed interval is less than 200 feet from a property line shall be produced unless approved by the Supervisor. An operator requesting approval to produce a well in which the completed interval is located closer than 200 feet from a property line shall furnish the Supervisor with letters expressing acceptance or objection from operators of offset properties.

15. Enhanced Oil and Gas Recovery Operations. Operators shall timely initiate enhanced oil and gas recovery operations for all competitive and noncompetitive reservoirs where such operations would result in an increased ultimate recovery of oil or gas under sound engineering and economic principles. A plan for such operations shall be submitted with the results of the annual MER review as required in paragraph 3A(3) of this Order.

16. Competitive Reservoir Operations. Development and production operations in a competitive reservoir may be required to be conducted under either pooling and drilling agreements or unitization agreements when the Conservation Manager determines, pursuant to 30 CFR 250.50 and delegated authority, that such agreements are practicable and necessary or advisable and in the interest of conservation.

A. Competitive Reservoir Determination. The Supervisor shall notify the operators when he has made a preliminary determination that a reservoir is competitive as defined in this Order. An operator may request at any time that the Supervisor make a preliminary determination as to whether a reservoir is competitive. The operators, within thirty (30) days of such preliminary notification or such extension of time as approved by the Supervisor, shall advise of their concurrence with such determination, or submit objections with supporting evidence. The Supervisor will make a final determination and notify the operators.

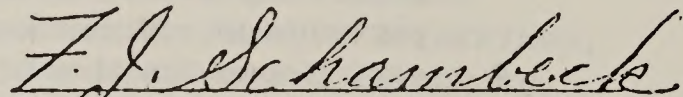


- B. Development and Production Plans. When drilling and/or producing operations are conducted in a competitive reservoir, the operators shall submit for approval a plan governing the applicable operations. The plan shall be submitted within ninety (90) days after a determination by the Supervisor that a reservoir is competitive or within such extended period of time as approved by the Supervisor. The plan shall provide for the development and/or production of the reservoir, and may provide for the submittal of supplemental plans for approval by the Supervisor.
- (1) Development Plan. When a competitive reservoir is still being developed or future development is contemplated, a development plan may be required in addition to a production plan. This plan shall include the information required in 30 CFR 250.34. If agreement to a joint development plan cannot be reached by the operators, each shall submit a separate plan and any differences may be resolved in accordance with paragraph 17 of this Order.
- (2) Production Plan. A joint production plan is required for each competitive reservoir. This plan shall include (a) the proposed MER for the reservoir; (b) the proposed MPR for each completion in the reservoir; (c) the percentage allocation of reservoir MER for each lease involved; and (d) plans for secondary recovery or pressure maintenance operations. If agreement to a joint production plan cannot be reached by the operators, each shall submit a separate plan, and any differences may be resolved in accordance with paragraph 17 of this Order.
- C. Unitization. The Conservation Manager shall determine when conservation will be best served by unitization of a competitive reservoir, or any reservoir reasonably delineated and determined to be productive, in lieu of a development and/or production plan or when the operators and lessees involved have been unable to voluntarily effect unitization. In such cases, the Conservation Manager may require that development and/or production operations be conducted under an approved unitization



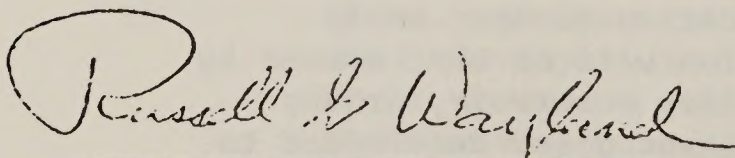
plan. Within six (6) months after notification by the Conservation Manager that such a unit plan is required, or within such extended period of time as approved by the Conservation Manager, the lessees and operators shall submit a proposed unit plan for designation of the unit area and approval of the form of agreement pursuant to 30 CFR 250.51.

17. Conferences, Decisions and Appeals. Conferences with interested parties may be held to discuss matters relating to applications and statements of position filed by the parties relating to operations conducted pursuant to this Order. The Supervisor or Conservation Manager may call a conference with one or more, or all, interested parties on his own initiative or at the request of any interested party. All interested parties shall be served with copies of the Supervisor's or Conservation Manager's decisions. Any interested party may appeal decisions of the Supervisor or Conservation Manager pursuant to 30 CFR 250.81. Decisions of the Supervisor or Conservation Manager shall remain in effect and shall not be suspended by reason of any appeal, except as provided in that regulation.



F. J. Schambeck  
Oil and Gas Supervisor  
Pacific Area

Approved:



Russell G. Wayland  
Chief, Conservation Division



APPENDIX A

Subparagraph 12.B "Numbering Well Completions. Well completions made after the date of this Order shall be designated using numerical and alphabetical nomenclature. Once designated as a reservoir or commingled reservoirs completion, the well completion number shall not change. . ."

The intent of this Subparagraph is not necessarily to change the existing well completion names but to change the method of naming well completions after the effective date of this Order in order to insure that a completion in a given reservoir(s) and a specific well bore will be assigned a unique name and will retain the name permanently. For further clarification, the following guidelines and examples are offered:

1. Each well bore will have a distinct, permanent number.
2. Each reservoir or commingled reservoirs completion in a well bore will have a unique permanent designation which includes the well bore number in its nomenclature.
3. For the purpose of this Subparagraph, a "completion" is defined as all perforations in a given reservoir(s) in a specific well bore and is not necessarily associated with a tubing string or strings.
4. If more than one completion is made in a well bore, an alphabetical suffix must be used in the nomenclature to differentiate between completions.
5. An alphabetical prefix may be utilized to designate the platform from which the well will be produced.

Example No. 1: The first well drilled from the A Platform is a single completion.

Well No. A-1

(Should an operator wish to use an alphabetical suffix with a single completion, he may do so.)

Example No. 2: A well drilled by a mobile rig need not carry an alphabetical prefix.

Well No. 1

(If the well is later connected to and produced from a production platform, the well shall be redesignated to reflect an alphabetical prefix.)



Example No. 3: The second well drilled from the A Platform is a triple completion.

First Completion

Second Completion

Third Completion

A-2

A-2-D

A-2-T

(In the above example, the letters "D" and "T" were used in naming the second and third completions utilizing current industry practice, although the intent is not to restrict operators to the use of these particular alphabetical suffixes. Any alphabetical suffix may be used as long as it is unique to the completion in that reservoir or commingled reservoirs.

Example No. 4: The drawing is shown to illustrate the fact once a completion in a specific well bore is designated in a given reservoir(s), it will retain that name permanently. Let us consider the A-2 completion shown in Example No. 3. Should a recompletion be made in a different reservoir(s) at a later date, it shall be renamed; however, the production from the reservoir(s) associated with the original A-2 completion will always be identified with the A-2 completion. Once the A-2 completion in the 10,000' sand is squeezed and plugged off and the recompletion made to the 7,000' sand, the completion in the 7,000' sand would be designated A-2-A (or some other alphabetical suffix other than "D" or "T" presently associated with other completions in the 9,000' and 8,000' sands).

The Sundry notice (Form 9-331) submitted to obtain approval for the workover shall be the vehicle for naming the new completion.

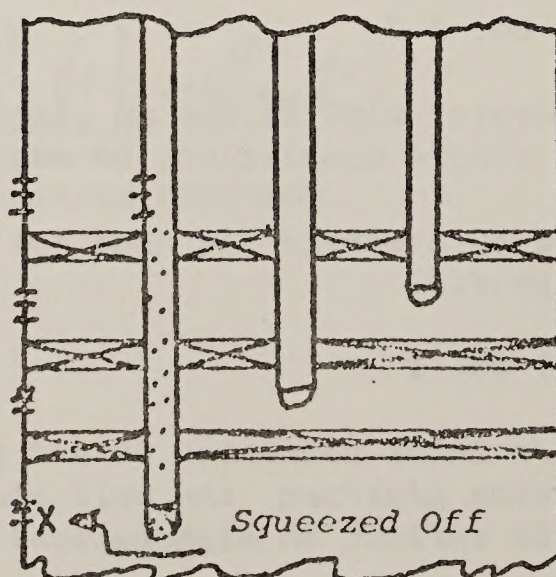
Reservoir

7,000' Sd.

8,000' Sd.

9,000' Sd.

10,000' Sd.



Completion Name

A-2-A

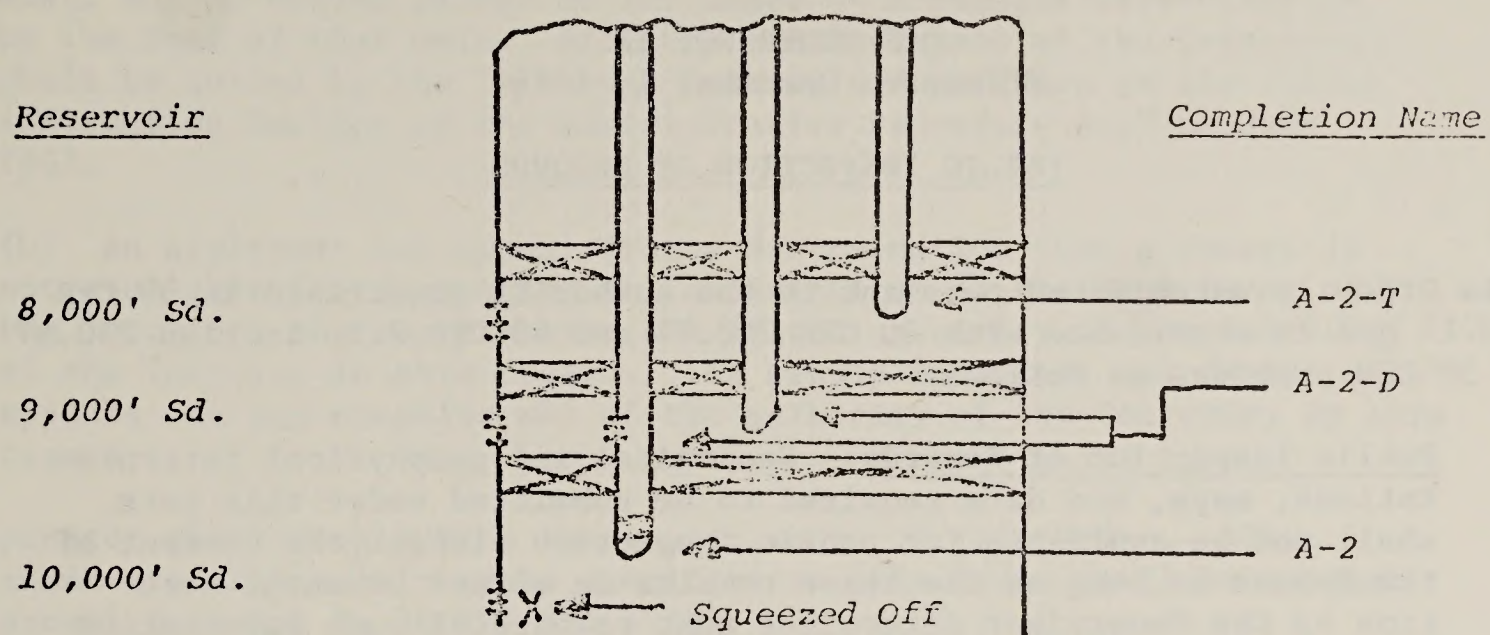
A-2-T

A-2-D

A-2



Example No. 5: If the A-2 completion in Example No. 4 had been recompleted from the 10,000' sand to the 9,000' sand (where the A-2-D is currently completed), the completion would still be named A-2-D as both tubing strings would be considered one completion for purposes of this Order.





UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
PACIFIC AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS  
LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC AREA

OCS ORDER NO. 12  
Effective December 1, 1974

PUBLIC INSPECTION OF RECORDS

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.97 and 43 CFR 2.2 Section 250.97 of 30 CFR provides as follows:

Public Inspection of Records. Geological and geophysical interpretations, maps, and data required to be submitted under this part shall not be available for public inspection without the consent of the lessee so long as the lease remains in effect or until such time as the Supervisor determines that release of such information is required and necessary for the proper development of the field or area.

Section 2.2 of 43 CFR provides in part as follows:

Determinations as to Availability of Records. (a) Section 552 of Title 5, U. S. Code, as amended by Public Law 90-23 (the act codifying the "Public Information Act") requires that identifiable agency records be made available for inspection. Subsection (b)<sup>1</sup> of section 552 exempts several categories of records from the general requirements but does not require the withholding from inspection of all records which may fall within the categories exempted. Accordingly, no request made of a field office to inspect a record shall be denied unless the head of the office or such higher field

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Subsection (b) of section 552 provides that:

(b) This section does not apply to matters that are--

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(4) Trade secrets and commercial or financial information obtained from a person and privileged or confidential;

(9) Geological and geophysical information and data, including maps, concerning wells.



authority as the head of the bureau may designate shall determine (1) that the record falls within one or more of the categories exempted and (2) either that disclosure is prohibited by statute or Executive Order or that sound grounds exist which require the invocation of the exemption. A request to inspect a record located in the headquarters office of a bureau shall not be denied except on the basis of a similar determination made by the head of the bureau or his designee, and a request made to inspect a record located in a major organizational unit of the Office of the Secretary shall not be denied except on the basis of a similar determination by the head of that unit. Officers and employees of the Department shall be guided by the "Attorney General's Memorandum on the Public Information Section of the Administrative Procedure Act" of June 1967.

(b) An applicant may appeal from a determination that a record is not available for inspection to the Solicitor of the Department of the Interior, who may exercise all of the authority of the Secretary of the Interior in this regard. The Deputy Solicitor may decide such appeals and may exercise all of the authority of the Secretary in this regard.

The operator shall comply with the requirements of this Order. All departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

1. Availability of Records Filed on or After the Effective Date of This Order. It has been determined that certain records pertaining to leases and wells in the Outer Continental Shelf and submitted under 30 CFR 250 shall be made available for public inspection, as specified below, in the Area office, Los Angeles, California.
  - A. Form 9-152 - Monthly Report of Operations. All information contained in this form shall be available except the information required in the Remarks column.
  - B. Form 9-330 - Well Completion or Recompletion Report and Log.
    - (1) Prior to commencement of production, all information contained on this form shall be available except Item 1a, Type of Well; Item 4, Location of Well, At top prod. interval reported below; Item 22, If Multiple Compl., How Many; Item 24, Producing Interval; Item 26, Type Electric and Other Logs Run; Item 28, Casing Record; Item 29, Liner Record; Item 30, Tubing Record; Item 31, Perforation Record; Item 32, Acid, Shot, Fracture, Cement Squeeze, etc.; Item 33, Production; Item 37, Summary of Porous Zones; and Item 38, Geologic Markers.
    - (2) After commencement of production, all information shall be available except Item 37, Summary of Porous Zones, and Item 38, Geologic Markers.



(3) If production has not commenced after an elapsed time of five years from the date of filing, Form 9-330 as required in 30 CFR 250.38(b), excluding the total of such time that operations and production are suspended by direction of the Secretary of the Interior or his duly authorized representative, and further excluding the total of such time that operations and production are stopped or prohibited by Court order, all information contained on this form shall be available except Item 37, Summary of Porous Zones; and Item 38, Geologic Markers. Within 90 days prior to the end of the 5-year period, exclusive of exceptions noted above, the lessee or operator shall file a Form 9-330 containing all information requested on the form, except Item 37, Summary of Porous Zones, and Item 38, Geologic Markers, to be made available for public inspection. Objections to the release of such information may be submitted with the completed Form 9-330.

C. Form 9-331 - Sundry Notices and Report on Wells. (1) When used as a "Notice of Intention to" conduct operations, all information contained on this form shall be available except Item 4, Location of Well, At top prod. interval; and Item 17, Describe Proposed or Completed Operations.

(2) When used as a "Subsequent Report of" operations, and after commencement of production, all information contained on this form shall be available except information under Item 17 as to subsurface locations and measured and true vertical depths for all markers and zones not placed on production.

D. Form 9-331C - Application for Permit to Drill, Deepen or Plug Back. All information contained on this form and location plat attached thereto, shall be available except Item 4, Location of Well, at proposed prod. zone; and Item 23, Proposed Casing and Cementing Program.

E. Form 9-1869 - Quarterly Oil Well Test Report. All information contained on this form shall be available.

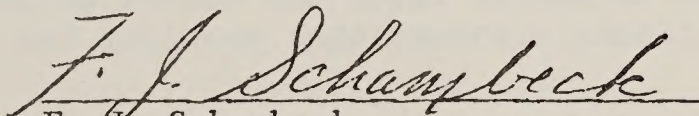
F. Form 9-1870 - Semi-Annual Gas Well Test Report. All information contained on this form shall be available.

G. Multi-Point Back Pressure Test Report. All information contained on the form used to report the results of required multi-point back pressure test of gas wells shall be available.

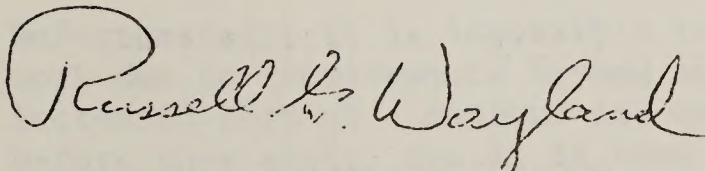
H. Sales of Lease Production. Information contained on monthly Geological Survey computer printout showing sales volumes value, and royalty of production of oil, condensate, gas and liquid products, by lease, shall be made available.



2. Filing of Reports. All reports on Form 9-152, 9-330, 9-331, 9-331C, 9-1869, 9-1870, and the forms used to report the results of multi-point back pressure tests, shall be filed in accordance with the following: All reports submitted on these forms after the effective date of this Order shall include a copy with the words "Public Information" shown on the lower right-hand corner. All items on the form not marked "Public Information" shall be completed in full; and such forms, and all attachments thereto, shall not be available for public inspection. The copy marked "Public Information" shall be completed in full, except that the items described in 1.A., B., C., and D. above, and the attachments relating to such items, may be excluded. The words "Public Information" shall be shown on the lower right-hand corner of this set. This copy of the form shall be made available for public inspection.
3. Availability of Records Filed Prior to December 1, 1974. Information filed prior to December 1, 1974, on Forms 9-152, 9-330, 9-331, and 9-331C is not in a form which can be readily made available for public inspection. Requests for information on these forms shall be submitted to the Supervisor in writing and shall be made available in accordance with 43 CFR Part 2.
4. Availability of Inspection Records. All accident investigation reports, pollution incident reports, facilities inspection data, and records of enforcement actions are also available for public inspection.

  
F. J. Schambeck  
Oil and Gas Supervisor  
Pacific Area

Approved: November 21, 1974



Russell G. Wayland  
Chief, Conservation Division







APPENDIX C

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
OIL AND GAS OPERATIONS  
PACIFIC AREA

February 22, 1977

NOTICE

The attached copies of Notices to Lessees include:

- NTL 77-1 "Applications for Exploratory Operations"
- NTL 77-2 "Minimum Requirements for Shallow Drilling Hazards"
- NTL 77-3 "Minimum Cultural Resource Survey Requirements"
- NTL 77-4 "Minimum Requirements for Biological Surveys"

These notices are effective as of March 1, 1977, and are supplied to you as an OCS oil and gas lessee or interested party in OCS exploratory operations.

The purpose of these notices is to keep you informed as to what we shall expect and require prior to approving proposals to conduct exploratory drilling operations. It is our intent to reduce the total volume of work required by standardizing submittals and avoiding supplementary submittals with subsequent delays in approval.

In all of the notices, the intent has been to avoid duplicate submittal of material. Information submitted as a part of a plan of operations need not be resubmitted with an application to drill. Basic information--methods and procedures for conducting certain operations, contingency plans, etc.--that is once submitted, can be updated by a supplemental letter giving only the changes necessary to cover the changed conditions.

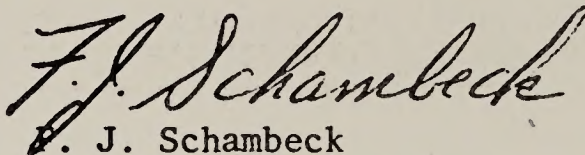
Unfortunately, it is impossible to avoid a certain amount of increased paper work due to requirements beyond our control. We shall attempt to keep this increased work at a minimum and we shall try to anticipate most problems before they arise, but it is even more to your advantage as an operator than



to ours as a regulating agency to avoid time-consuming resubmittals and consequent delays in the approval procedure.

We are preparing additional notices regarding the procedures to be used in some operations that are a part of exploratory drilling. The first of these notices should cover the required procedures in well testing and in setting upper casing strings. These will be distributed as they are completed and approved.

Sincerely yours,



F. J. Schambeck  
Oil and Gas Supervisor  
Pacific Area



UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
WESTERN REGION  
PACIFIC AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS  
LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC AREA

NTL 77-1

March 1, 1977

APPLICATIONS FOR EXPLORATORY OPERATIONS  
OCS CALIFORNIA, SOUTH OF POINT CONCEPTION

A. Purpose and Objective

To summarize requirements and instructions relative to approval of "Applications for Permit to Drill" exploratory wells.

B. Authority

1. 30 CFR 250 - Oil and Gas and Sulphur Operations in the Outer Continental Shelf.

C. Surveys Pertaining to Lease Operations

The District Engineer shall be notified, prior to commencing surveys, as to the type, scope and timing of surveys to be conducted. The other "Agencies to Contact" listed below in section F., shall also be contacted prior to commencing operations. Survey activities shall not interfere with operations on other leases and a statement that the operator(s) of the other leases consent to the proposed survey(s) shall be included in the notice of intent to conduct surveys.

When the operations proposed involve penetration of the ocean floor, such as soil sampling, a written application shall be filed for approval with the District Engineer since other surveys may be required prior to commencing operations. As a general rule, operations involving penetration of the ocean floor more than 50 feet (15.25 meters) will require at least a shallow drilling hazard survey.

D. Exploratory Drilling

1. Surveys To Be Conducted

a. Shallow Drilling Hazards Survey

As required by NTL 77-2 - Minimum Requirements for Shallow Drilling Hazards Survey, OCS Exploratory Drilling".



b. Cultural Resource Survey

As required by NTL 77-3 - Minimum Cultural Resource Survey Requirements, OCS Exploratory Drilling".

c. Biological Survey

As required by NTL 77-4 - Minimum Requirements for Biological Survey, OCS Exploratory Drilling".

Note: Since data obtained from techniques used in any particular survey may be of value in interpretations of other surveys, scales used and navigational reference points should be such as to facilitate correlation.

2. Exploratory Drilling Plans

At least four copies of the exploratory drilling plan shall be filed with the Oil and Gas Supervisor for approval with, or prior to, submittal of the Application for Permit to Drill. Data included in such plan shall provide:

- a. A description of the drilling vessel, platform, or other structures showing the location, the design, and other major features thereof, including features pertaining to mooring, sea and weather characteristics and to pollution prevention and control. If a jack-up rig, or other bottom founded platform is to be used, the structural characteristics in regard to the geotechnical evaluation required in the shallow drilling hazards survey shall also be included.
- b. The proposed location of each well, including surface and projected bottom hole location for directionally drilled wells. Water depth, proposed true vertical depth, and proposed measured depth shall also be included.
- c. Structural interpretations based on available geological and geophysical data including a minimum of a structural contour map and two cross sections at right angles to each other showing the course of the proposed well and the depths at which the well will penetrate each formation. Two CDP seismic profiles at right angles to each other intersecting at, or near, the proposed site and the anticipated stratigraphic section.
- d. Emergency operating procedures and requirements for safety meetings, training procedures, and drills.
- e. An oil spill contingency plan for initiating corrective actions to control and remove pollutants resulting from oil and gas operations in conformance with OCS Order No. 7.



The oil spill contingency plan shall guide operator and contractor personnel in their response to an emergency and aid them by compiling sources of assistance and materials. The plan shall, as minimum, include:

- 1) Notification procedures and a list of agencies and personnel with contact numbers.
  - 2) Response procedures and methodology for spills of various sizes.
  - 3) A list of equipment, materials, and personnel available at the site and at other locations. The list should include equipment and materials for containment (booms, etc.), recovery (skimmers, etc.), storage (barges, tanks, bags, etc.), clean-up (dispersants, absorbents, etc.), and for any other pertinent uses. Response time for emergencies in the area(s) of permit and equipment capability shall be included.
  - 4) Responsibilities of operator personnel with direction as to response and reporting procedures.
  - 5) Training and drill procedures.
  - 6) Preventative measures and precautions to be taken to minimize spills and pollution.
- f. A contingency plan shall be submitted when drilling operations are to be conducted to penetrate formations that are not known to be free of hydrogen sulfide ( $H_2S$ ). Compliance with the provisions of GSS-OCS-1; first edition, February, 1976, "Safety Requirements for Drilling Operations in Hydrogen Sulfide Environment", shall be required.
- g. Detailed critical operations and curtailment plans as outlined in OCS Order No. 2. Descriptions of procedures and methods for conducting these operations that are not addressed elsewhere, i.e., applications for permission to drill, etc., should be included in the exploratory drilling plan. Critical operations shall include, but need not be limited to, those mentioned in OCS Order No. 2.
- h. Any other pertinent data as the Supervisor may prescribe.

Any major changes, additions, or supplements to a plan of exploration will require the submittal of supplemental plans of exploration. These plans require the same type of information as for the original plan, but where information has not changed, it may be



included by reference to the original. The same consideration is given to any major modification as to the original plan prior to approval.

### 3. Application for Permit to Drill

Prior to commencing drilling under an approved exploratory drilling plan, the lessee/operator shall file in triplicate (plus two public information copies) an Application for Permit to Drill (Form 9-331C) with the District Engineer for approval. Alternately, these applications may be filed in quadruplicate, plus the two public information copies, with the Area Supervisor concurrently with the plan of exploration to speed the process of approval.

All drilling operations shall be conducted in accordance with the OCS operating regulations, 30 CFR 250, and all applicable OCS Orders and Notices to Lessees.

In addition to the information specified on Form 9-331C, all information required by 30 CFR 250.91 shall be included with the application for permit to drill.

The following and other pertinent information, not previously furnished, shall also be included with the application for permit to drill:

- a. A description of the integrated blowout prevention system. The maximum anticipated surface pressure and the criteria used to determine this pressure.
- b. A schematic diagram and operational procedure for the diverter system and/or the BOPE.
- c. The proposed casing program including size, weights, grades, and setting depths of each string. The program shall include hole sizes and, if pilot holes are to be drilled, the size and method of hole opening.
- d. The proposed cementing programs to be used in cementing casing including quantities and types of cement.
- e. A summary of integrated casing setting depths, fracture pressures, and anticipated mud pressures. Also a summary of the casing design including the safety factors for collapse, tension, and burst.
- f. Proposed mud program including the mud type, planned mud weights, amounts of mud in active pits and reserve pits,



and/or storage tanks. The minimum quantities of mud material to be maintained at the drill site for emergency use, mud characteristics and mud-testing program. The mud program shall include a statement as to the toxicity of the mud and information as to the disposal of mud and drill cuttings.

- g. Mud logging program including a description of the mud logging unit with appropriate hydrocarbon and hydrogen sulfide detection equipment.
- h. Logging program proposed and intervals to be logged.
- i. Proposed sampling program (drill cuttings, side-wall sampling and coring).
- j. Proposed directional survey program.
- k. Abandonment procedures and methods of ocean bottom clean up.
- l. Approval of an application to drill does not constitute approval to do other operations, unless details of these operations are submitted with the application.

If anchor pilings are necessary, a letter requesting approval and containing the following information shall be filed: number of anchor pilings, depth of piling, design of piling, and methods of removal and ocean bottom clean up. Verbal approval may be given by the District Engineer provided a written application is filed for approval.

A testing and/or completion program cannot be commenced nor a hole abandoned without prior approval by the District Engineer and shall be submitted on Form 9-331 (Sundry Notices and Reports on Wells), notwithstanding any verbal approval that may have been given by the District Engineer.

- m. Detailed procedures for the operations listed above and, if not previously furnished, for any critical operations as defined in section D.2.g., above.
- n. Any other pertinent data as the Supervisor may prescribe.
- o. When changes are desired in the drilling plan for a specific well, Form 9-331 "Sundry Notices and Reports on Wells" shall be submitted to the District Engineer for approval.

A subsequent report, Form 9-331, must be submitted not later than 30 days after completion of the approved work.



E. Confidentiality of Data Submitted

All data received by the Area Supervisor and/or the District Engineer shall be treated in conformance with existing laws, regulations, and orders.

F. Agencies to Contact

1. The operator has the responsibility of obtaining all permits required by existing laws and regulations. USGS permits are not contingent upon any other permits the operator may be required to obtain. Copies of correspondence regarding such permits are requested.

The agencies listed below are for information only, but are, to the best of our knowledge, complete at the present time.

2. The operator should, prior to commencing operations, obtain the necessary permits, as required, from the following agencies:

- a. Department of the Army (Navigation Permit)  
Los Angeles District, Corps of Engineers  
P.O. Box 2711  
Los Angeles, CA 90053
- b. U. S. Environmental Protection Agency (NPDES Permit)  
Region IX  
100 California Street  
San Francisco, CA 94111

Note: It is understood that the NPDES permit can be obtained by each operator or that it may be obtained for the drilling vessel (contractor) for operations within a specific area.

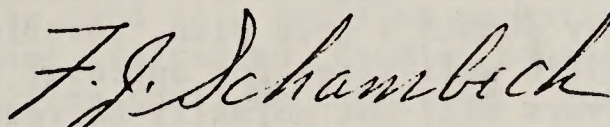
Informal contacts with the San Francisco Regional Office of the EPA indicate that they will require an ocean dumping permit (as distinguished from the NPDES permit) if cuttings and mud are to be transported from the drill site for disposal in ocean waters.

3. The permittee should, prior to commencing operations, notify the following agencies and should conduct all operations in accordance with their jurisdictional requirements:



- a. Commanding Officer  
Fleet Air Control and Surveillance Facility  
Naval Air Station, North Island  
San Diego, CA 92135  
(714) 437-6845
- b. Commander, Pacific Missile Range  
Point Mugu Naval Base  
Point Mugu, CA 93042  
Attention: Range Operations Officer  
(805) 982-7851
- c. Commander, 11th Coast Guard District  
400 Oceangate  
Long Beach, CA 90822  
(213) 590-2301

Note: In order that proposed operations may be included in local "Notices to Mariners", the Commander, 11th Coast Guard District, should be notified, as early as possible prior to commencing operations, of any proposed operations, including survey work, to be conducted within the area affected by these guidelines.



F. J. Schambeck  
Area Oil and Gas Supervisor  
Pacific Area



UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
WESTERN REGION  
PACIFIC AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS  
LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC AREA

NTL 77-2

March 1, 1977

MINIMUM REQUIREMENTS FOR SHALLOW DRILLING HAZARD SURVEY  
OCS EXPLORATORY DRILLING, PACIFIC AREA

Pursuant to 30 CFR 250.34(a), Exploratory Drilling Plan, a survey shall be conducted in all areas considered for exploratory drilling to investigate potential hazards in the shallow drilling phase of these operations. Information obtained should provide sufficient high-resolution data for potential hazard detection on the sea floor, near subbottom, and to at least 1,000 feet (305 meters) subbottom.

The survey shall be run along perpendicular grid lines spaced 1,000 feet (305 meters) apart to cover an area around the drill site as determined to be sufficient by the Area Supervisor. In lieu of a site-specific investigation, operators may submit a grid plan, covering a larger area than that required for a specific well site, for approval by the Supervisor. If approved, specific site surveys will not normally be required for locations within the larger area of investigation.

The final data submitted shall include an analysis of information derived from, but not limited to, the following:

1. High-Resolution Geophysical Data

- (a) Sparker, or equivalent, for shallow penetration to at least 1,000 feet (305 meters); sparker surveys may be either unfold and/or multifold, provided that data is of sufficient quality to provide the required results as outlined below.
- (b) Subbottom profiler, for very shallow penetration; should provide optimum resolution of shallow horizon characteristics for at least the upper 100 feet (30.5 meters).

2. Seismic CDP Data

For deep penetration including velocity analysis; to be used for correlative purposes with shallow data. Data previously



obtained by operator will be acceptable and no new data will normally be required.

### 3. Dual Side Scan Sonar

Slant range to obtain 100 percent coverage, using overlap if required, and optimum towing depth to provide maximum sea-floor detail. In waters over 475 feet (144 meters) in depth, this survey will not be required.

### 4. Water Depth Recorder

An analog recorder should be used for bathymetry.

Analyses of the data should provide sufficient information for a general geologic evaluation of the area around a proposed drill site. Contour maps showing bathymetry, sediment thickness and structure; cross-sections; and geologic hazard anomaly maps (for possible near-surface faulting, potential anomalous pressure conditions, indicated sediment stability, etc.); shall be utilized with the profiles as aids in selection of exploratory drill site locations with minimal hazard potential. Should preliminary study of the profiles indicate potential hazards (e.g., sea-bottom slumps, steep bottom slopes, etc.), further analyses of such areas may be required.

When jack-up rig equipment is to be used in a drilling operation, a geotechnical evaluation, including, but not limited to, studies of seismicity, soil analyses, slope stability and faulting shall be submitted. Sufficient bottom samples and/or soil borings will be required at a site to properly evaluate sediment characteristics and relative foundation stability. Boring locations should be optimally positioned from the results of seismic profiling.

Prior to approval of a proposed drilling location, additional information may be required as determined by interpretation of the geophysical and other data for the site area. Optional equipment and techniques, including underwater photography and television, hydrocarbon sniffer surveys, divers (as permitted by oceanographic conditions and water depth), and sea-bottom sampling, may be utilized to substantiate site selection to insure personnel and equipment safety.

Navigation for the survey shall utilize state-of-the-art positioning systems with accuracy of  $\pm$  50 feet (15.25 meters) at 200 miles (322 kilometers). Navigational reference points should be such as to facilitate correlation with other surveys required for approval of the proposed operation.

### General Guidelines

The Area Supervisor must be notified at least 72 hours prior to commencement of these surveys so that arrangements can be made for observation of field procedures, if desired.



A geophysicist shall be present during all survey activities. The geophysicist shall insure that the equipment is properly tuned and print-out data are accurate and of sufficient quality. The data shall be evaluated by the geophysicist to determine if any suggested subbottom anomalies are considered as significant to warrant additional survey data.

#### Suggested Survey Report Format

A narrative report shall be submitted summarizing survey instrumentation, procedures, ocean conditions; interpreting the results obtained; and evaluating the hazard potential as revealed by the survey. The report shall be signed by the survey geophysicist.

The report shall include, but need not be restricted to, the following:

1. Map showing the survey area(s) in relation to the geographic area and indicating lease and block numbers.
2. Map(s) of survey area(s) to include OCS lease number, block number and geographic area. Additional maps, or overlays, showing:
  - (a) Vessel track lines and shotpoints with the appropriate Lambert Grid Zone X & Y coordinates and latitude-longitude reference points.
  - (b) Bathymetry with a contour interval of 20 feet (6 meters) or less.
3. A map depicting structural conditions with a contour interval of approximately 100 feet (30.5 meters)
4. The side scan sonar record, sparker data, and subbottom profile data with an interpretation of the area at or near the proposed drill site(s).
5. Structural cross sections at right angles through the proposed drill site(s).
6. Where additional survey, i.e., visual coverage by photo, television, or diver observation is considered necessary, a general narrative summarizing this information shall be submitted. In all cases where an anomaly is encountered, all survey data for the line(s) indicating the anomaly shall be submitted.
7. An assessment of the potential for shallow drilling hazards in the surveyed area considering all the items mentioned above, as applicable. The assessment shall include a shallow drilling hazards map.

Four copies of the shallow drilling hazards survey shall be furnished by the



lessee/operator to the Pacific Area Oil and Gas Supervisor, U. S. Geological Survey. Where practicable, all maps should be on the same scale and of sufficient size to correlate data and serve as a study tool for analyses. The total data obtained from the survey shall be maintained by the operator and shall be available to the Supervisor upon request.

*F. J. Schambeck*

F. J. Schambeck  
Oil and Gas Supervisor  
Pacific Area



UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION  
WESTERN REGION  
PACIFIC AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS  
LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC AREA

NTL 77-3

March 1, 1977

MINIMUM CULTURAL SURVEY REQUIREMENTS  
OCS EXPLORATORY DRILLING

Executive Order No. 11593, Protection and Enhancement of the Cultural Environment, dated May 13, 1971, directed that necessary measures be taken to preserve all Federally-owned sites, structures, and objects of historical, architectural or archeological significance. This guideline will be effective as of the date of this notice and will apply to future operations on all areas considered for exploratory drilling, but the requirements shall be limited to areas in less than 394 feet (120 meters) of water.

In those areas determined by the Oil and Gas Supervisor (hereinafter referred to as the Supervisor) to include sites of potential cultural significance, an investigation shall be conducted to ensure that sites of cultural significance will not be adversely affected. This investigation shall be limited to those areas where the Supervisor has tangible evidence that cultural resources may exist and lessees in such areas will be notified of the need to conduct such an investigation prior to conducting exploratory operations. The primary means of investigation will consist of a high-resolution geophysical survey.

Cultural Resource Survey

1. When a cultural investigation is required in a leased area, or area sought for permit, the primary geophysical survey will utilize, but is not necessarily limited to, the following:

Magnetometer - This tool will be required only when the probable cultural resources to be investigated are such that they may be detected by a magnetometer survey. When required, tuning and height of sensor above the sea floor shall be such as to obtain optimum sensitivity levels. In anomalous magnetic areas, where magnetometer data would be rendered invalid, this requirement may be waived by the Supervisor.



Dual Side-Scan Sonar - Information from shallow drilling hazards survey will be acceptable if coverage is adequate.

Water Depth Recorder and Acoustic Subbottom Profiler - Information from shallow drilling hazards survey will be acceptable if coverage is adequate.

2. Magnetometer surveys shall be run:

a. To clear a specific site for exploratory drilling, an approximate area of one square mile centered on the site shall be surveyed. The basic grid shall consist of eleven parallel survey lines spaced 150 meters apart and five perpendicular tie-lines spaced 400 meters apart.

b. To clear a lease block, the block shall be covered by survey lines spaced 150 meters apart in one direction and five perpendicular tie-lines spaced 1,000 meters apart.

3. Optional equipment and techniques, i.e., visual investigations, etc., may be required to delineate and confirm or negate the importance of anomalies for cultural preservation. Where evaluation confirms that a site may have archeological or historical value, an alternate location, as approved by the Supervisor, may be selected at a distance necessary to prevent disturbance of the site.

4. Navigation for the survey shall utilize state-of-the-art positioning systems with accuracy of  $\pm$  50 feet (15.25 meters) at 200 miles (322 kilometers). Navigational reference points should be such as to permit correlation with other surveys required for approval of the proposed operations.

General Guidelines

A marine archeologist is not required during all survey activities. A geophysicist shall be present to insure that the equipment is properly tuned and print-out data are accurate and of sufficient quality. The data shall be evaluated by the survey geophysicist to determine if any suggested anomalies warrant additional survey data. When anomalies that will be affected by operations cannot be explained by other available information, additional survey data and/or appraisal by a qualified marine archeologist may be required.

When an area has been designated as an area of cultural significance by an appropriate agency and the minimum survey indicates a site(s) of potential significance in the area of the proposed location, the operator will have three alternatives:



- a. Employ operational procedures to ensure the protection of the potential site(s) of significance.
- b. Adjust the location to avoid the site(s) of potential significance.
- c. Perform additional survey to define the potential site(s) of significance and/or present an appraisal by a qualified marine archeologist defining the site(s).

The Supervisor must be notified at least 72 hours prior to commencement of these surveys so that arrangements can be made for observation of field procedures if desired.

#### Survey Report Format

A narrative report shall be submitted summarizing survey instrumentation, procedures, ocean conditions, interpreting the results obtained, and evaluating the cultural significance of any anomalies revealed by the survey. The report shall be signed by the survey geophysicist (and/or a qualified marine archeologist when required as stipulated above).

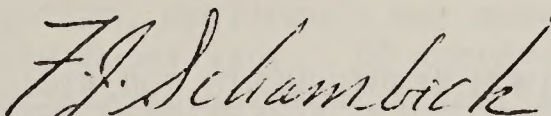
The report shall include, but need not be restricted to, the following:

1. Map showing the survey area(s) in relation to the geographic area and indicating lease and block numbers.
2. Map(s) or survey areas(s) to include OCS lease number, block number and geographic area. Additional maps, or overlays, showing:
  - a. Vessel track lines and navigational reference points with the appropriate Lambert Grid Zone X and Y coordinates and latitude-longitude reference points.
  - b. Bathymetry with a contour interval of 20 feet (6 meters) or less.
3. Map(s) indicating the relationship of anomalies to the proposed drill site(s).
4. The side-scan sonar record, magnetic profile data, and subbottom profile data with an interpretation of the area at or near the proposed drill site(s).
5. Where additional survey, i.e., photo, television, diver observation, etc., was considered necessary, a general narrative summarizing this information shall be submitted. In all cases where an anomaly is encountered, the original of all survey data for the line(s) indicating the anomaly shall be submitted.



6. The assessment as to the possible existence of a cultural resource as outlined above.

Four copies of the cultural resource survey report shall be furnished by the lessee/operator to the Oil and Gas Supervisor, Pacific Area, U. S. Geological Survey. Where practicable, all maps should be on the same scale of sufficient size to correlate data and serve as a study tool for analyses. The total data obtained from the investigation shall be maintained by the operator and shall be available to the Supervisor upon request.



F. J. Schambeck  
Oil and Gas Supervisor  
Pacific Area



UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
CONSERVATION DIVISION

WESTERN REGION  
PACIFIC AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS  
LEASES IN THE OUTER CONTINENTAL SHELF, PACIFIC AREA

NTL 77-4

March 1, 1977

MINIMUM REQUIREMENTS FOR BIOLOGICAL SURVEYS  
OCS EXPLORATORY DRILLING

Recent OCS leases include stipulations concerning biological surveys. No Application for Permit to Drill will be approved by the Oil and Gas Supervisor (hereinafter referred to as the Supervisor) until he has determined that the lessee's exploratory drilling plan required by 30 CFR 250.34(a), is adequate to insure that exploration operations on the leased area will have no significant adverse effect on the biotic community.

These requirements shall be effective as of the date of this notice and will apply to the portions of leases OCS-P 0269, 0270, 0272, 0273, 0274, 0277, 0278, 0285, and 0288 within 1,500 meters from the 60-meter isobath. The requirements may also apply to other leases, and areas proposed for operations, where biological surveys have not been conducted, that may contain significant biological communities. In the latter case, lessees will be notified, in writing, by the Supervisor, within two years of the effective date of the lease, that these requirements will apply.

Prior to exploratory drilling operations, the lessee shall conduct a biological survey, when required as above, in the proposed area to determine the biotic communities present and their potential value. Where such communities are found to exist, exploratory drilling locations shall be selected so as to provide the minimum biologic impact commensurate with geologic and economic considerations. The information obtained from the survey shall be submitted to the Supervisor as a biological survey report with, or prior to, the Application for Permit to Drill.

Survey Plan

Prior to conducting biological investigations, the applicant shall present a plan of the proposed survey to the Supervisor for approval. This plan shall be based on geophysical data (side-scan, shallow profiler and fathometer) and any other pertinent data available. The basic geophysical data



may be data obtained during any previous investigations of the area; shallow drilling hazards and cultural surveys for example. The preliminary data shall be used to determine the area of investigation and the procedures to be used in the conduct of the survey.

The proposed survey plan shall include a map showing the proposed location in the lease area, the proposed orientation of the drilling vessel and anchors, and the proposed survey area and pattern. The intended date of commencement and the estimated time required shall also be provided.

In lieu of a specific site investigation, applicants may submit a plan covering a larger area for approval by the Supervisor. If approved, specific site surveys will not be required within the area of investigation.

#### Basic Survey Requirements

The area of investigation for a site-specific survey shall include, as a minimum, that area immediately affected by the proposed drilling operation. In the case of an anchored drilling vessel, the minimum area shall be the area within the anchor spread of the vessel. However, consideration should be given to possible adjustments of location.

A more general survey of adjacent areas that could be subjected to any adverse effects by any discharge from the drilling operation may also be required.

The principal means of investigation shall be visual. Acceptable means of investigation are video-tape or movie transects and/or photographic surveys. If preliminary review of the photo coverage by marine biologists indicates an area to have significant biological value, further survey may be required to substantiate and/or delineate an area of potential significance. An alternative may be to adjust the proposed location or to select an alternate location to minimize interference within the significant area.

Additional visual surveys may consist of additional photographic coverage or physical observation by a diver-biologist as permitted by water depth (generally 150 feet or 50 meters, or less), ocean conditions and diver safety, or by observation from submersibles.

The basic pattern of the site-specific visual survey shall be a perpendicular grid designed to adequately cover the area. However, the actual pattern and the spacing shall be determined by the apparent bottom conditions observed on the geophysical surveys. The pattern and spacing may vary according to the portions of the area being investigated, and may be adjusted for effectiveness by the actual conditions observed.

In addition to the visual survey, bottom samples shall be taken, by appropriate means considering the bottom type, at selected intervals. These samples



will be taken to substantiate visual and geophysical findings and for taxonomic identification. Sufficient samples should be taken only to accomplish the specific goals of the investigation. Collection of specimens may be retained for reference material, but the collections should be kept to a minimum.

Current speed and direction and water samples shall be taken at the proposed location. These measurements and samples will be taken near the surface, approximately six feet (2 meters) from the bottom, and at mid-depth where practical. Navigation for the survey shall utilize state-of-the-art positioning systems with accuracy of  $\pm 50$  feet (15.25 meters) at 200 miles (322 kilometers). Navigational reference points should be such as to facilitate correlation with other surveys required for approval of the proposed operation.

#### General Guidelines

The Supervisor must be notified at least 72 hours prior to commencement of the survey so that arrangements can be made for observation of field procedures, if desired.

All procedures used in the biological survey shall utilize standard state-of-the-art techniques. Marine biologists shall be on board to supervise procedures, identifications, and to determine the necessity of additional visual survey or sampling.

Operators are cautioned to have adequate equipment and methods, including back-up equipment, to ensure an adequate survey under the conditions expected to be encountered. Reasonable standby time should be allowed for weather conditions. Alternate survey plans and technology should consider contingency conditions to assure complete survey coverage.

#### Survey Report Format

A narrative report shall be submitted summarizing survey instrumentation and procedures and ocean and weather conditions. The report shall include a description and analysis of the biota, sediment types, water column, bottom topography and currents as revealed by the survey. The report shall be signed by the marine biologist in charge of the survey.

The report shall include, but need not be restricted to, the following:

1. Map showing the survey area(s) in relation to the geographic area and indicating lease and block numbers.
2. Map(s) of survey area(s) to include OCS lease number, block number and geographic area. Additional maps, or overlays, showing:
  - a) Photographic track lines and sampling points with the appropriate Lambert Grid Zone X and Y coordinates and latitude-longitude reference points.



- b) Bathymetry with a contour interval of 20 feet (6 meters) or less.
  - c) Any additional data from geophysical data that may serve to depict the bottom topography and biological conditions.
3. A visual record of the survey. This shall include a photograph of each sample station (conditions permitting) to cover an area of approximately six feet (2 meters) on a side. Selected portions of other photographic surveys that indicate the approximate abundance of the faunal and floral community should also be included. All photographic material should be in color where practical and as permitted by oceanographic conditions.
4. Bottom sample records.
- a) Bottom samples will be utilized to augment information on the approximate abundance of the faunal and floral community. No detailed species analysis need be conducted, but the five dominant species at each location should be identified and divided into major taxonomic groups where possible. In addition to the dominant species, any rare organisms or assemblages of organisms, schools of fish, birds, or the presence of marine mammals should be noted.
  - b) An analysis of the bottom samples to include the concentration of heavy metals (Cd, Mg, Pb, and Zn as a minimum) and hydrocarbons shall be made to establish background levels in the event of future operations at the site. Hydrogen sulfide ( $H_2S$ ) in the samples should be reported when detected.
5. Water column samples shall be analyzed and reported. The analyses will include salinity, temperature, dissolved oxygen, biological oxygen demand, total suspended solids, current speed and direction, turbidity (by a meter or light transmission instrument), and the concentration of heavy metals (Cd, Mg, Pb, and Zn as a minimum) and hydrocarbons. Samples shall be taken near the surface, approximately six feet (2 meters) from the bottom, and at mid-depth where practical.
6. A general narrative to include:
- a) Survey instrumentation and procedures.
  - b) Sea and weather state conditions, observed and historical.
  - c) Bottom topography.
  - d) A summary of the percent coverage of the faunal and vegetative groups at each sampling station and an areal distribution map



which depicts these groups and their densities (number of individuals per unit area) within the area of investigation shall be submitted to the extent that conditions allow. These distribution graphics may be superimposed over a separate bathymetric map.

- e) An identification and assessment of existing fisheries, both sport and commercial, in the areas of survey. (State Departments of Fish and Game and National Marine Fisheries Service have historical data).
- f) A summary of findings including an assessment of the potential for biologic impact due to exploratory drilling operations and methods to mitigate the impact.

Four copies of the biologic survey shall be furnished by the lessee/operator to the Pacific Area Oil and Gas Supervisor, U. S. Geological Survey. Where practicable, all maps should be on the same scale of sufficient size to correlate data and serve as a study tool for analyses. All data obtained from the investigation shall be maintained by the operator and shall be available to the Supervisor upon request.

*F. J. Schambeck*  
F. J. Schambeck  
Oil and Gas Supervisor  
Pacific Area





## United States Department of the Interior

OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

ORDER NO. 2974 (Revised)

Subject: Inter-Bureau Coordination in the Outer Continental Shelf  
(OCS) Minerals Program

**Sec. 1 Purpose.** The purpose of this order is to improve and make more formal the planning and operating functions of the OCS minerals program by enabling the Bureau of Land Management (BLM) and the Geological Survey (GS) to obtain expert advice from each other and from the Fish and Wildlife Service (FWS), the Heritage Conservation and Recreation Service (HCRS), and the National Park Service (NPS). This improvement will result from the mutual exchange of relevant information and expert advice on environmental research, monitoring activities, and operational activities associated with the OCS minerals program. Bureaus other than those explicitly mentioned may become involved in areas of their respective expertise.

**Sec. 2 Environmental Research and Monitoring.** These activities are carried out in the context of the Departmental OCS Environmental Studies Program for the administration, management, funding and constructing of studies in specific geographic areas as a part of the OCS mineral leasing program as administered by BLM. The OCS Environmental Studies Program includes data collection, subsequent monitoring, and special investigations. For the purpose of this order, bureau responsibilities are as follows:

- a. BLM shall consult with FWS and GS in designing the overall study programs and on the design for studies oriented to each separately identified geographic area. In this connection, BLM shall inform FWS and GS of its study plan schedule and request their recommendations concerning:
  - (1) Specific elements to be incorporated in studies (including but not limited to, scope, intensity, timing and required funding), and
  - (2) Allocation of funds and level of effort among various study elements.
- b. BLM may provide for FWS and GS involvement in the performance or management of studies under any of the following arrangements:



- (1) FWS and GS may perform or manage specific study elements as may be determined by the bureaus involved. BLM may reimburse FWS and GS, pursuant to memoranda of understanding, for costs incurred in the studies or other pertinent activities under this arrangement.
  - (2) FWS and GS may perform or manage elements of studies which another Federal agency is managing for BLM. In such instances FWS and GS would arrange for their participation directly with the other Federal agency.
- c. FWS and GS, and other Bureaus as appropriate, shall participate with BLM in evaluating OCS technical proposals received in the contracting process.
  - d. FWS and GS may participate with BLM in monitoring study elements of special interest to the participating bureaus.
  - e. BLM shall consult with NPS on activities that concern units of the National Park System.
  - f. If for good and sufficient reasons, and after consultations among the bureaus, participating bureaus do not agree with BLM's overall study program designs, the issues will be resolved through the procedures specified in Section 6, Resolution of Disagreements.

**Sec. 3 Cultural Resources Assessment Studies.** Cultural resource activities are those archeological and historical data collection and assimilation activities conducted in specific geographic areas as a part of the OCS mineral leasing program. These activities are carried out in the context of a BLM program for administration, management, funding, and constructing of regional studies, which include data collection, synthesis, and special investigations. BLM shall consult with HCRS on cultural resource activities using the procedures outlined in Section 2, Environmental Research and Monitoring, with the substitution of "HCRS" for "FWS and GS."

**Sec. 4 OCS Pre-Lease and Operational Activities.** OCS activities refer to the implementation of OCS regulations administered by BLM under 43 CFR Parts 2880 and 3300, and GS under 30 CFR Parts 250, 251 and 252.

- a. When an OCS area is being considered for leasing, the Manager of the designated BLM OCS Office shall request, pursuant to 43 CFR 3301.2, resource reports from FWS, GS, HCRS and NPS. Such reports may include but are not limited to:
  - (1) Information concerning results of periodic studies on problems relating to the impact of mineral exploration and exploitation on estuarine and coastal resources.



- (2) Information which relates directly or indirectly to the assessment of potential environmental impacts of mineral exploration and production on OCS lands.
  - (3) Information useful in the identification and designation of restricted use areas including, but not limited to, Marine Preserves, Marine or Estuarine Sanctuaries and National Wildlife Refuges, and coastal units of the National Park System.
- b. During the pre-leasing process the Manager of the designated BLM OCS Office shall obtain the views of the appropriate Regional or Area (Alaska) Director, FWS, concerning the potential effects of oil and gas development on biological resources.
  - c. In preparation of lease stipulations, BLM shall obtain the advice and participation of FWS and GS at the field and headquarters level. HCRS and NPS shall be consulted on matters pertinent to their responsibilities.
  - d. BLM shall give FWS and GS, and HCRS and NPS as appropriate, an opportunity, within specified time limits, to review and comment on the Proposed Notices and final Notices of Lease Sale prior to publication of the Notices in the Federal Register.
  - e. BLM, with the participation of FWS and GS and other Bureaus as appropriate, and in accordance with memoranda of understanding or other agreements entered into, will plan the location of pipeline rights-of-way. FWS shall prepare and submit reports to BLM concerning potential effects on biological resources from laying pipelines in proposed rights-of-way corridors.
  - f. The Area Oil and Gas Supervisors, GS, will consult with, and when appropriate receive recommendations from, the responsible field representatives of:
    - (1) BLM and FWS:
      - (a) Prior to issuance of draft OCS Orders;
      - (b) Prior to approval of exploratory drilling plans and plans of development; and
      - (c) Prior to approval of other major activities on the OCS.
    - (2) NPS on anticipated area-wide operations adjacent to coastal parks under NPS jurisdiction. At the request of NPS, additional consultations will be held on specific proposed plans.



(3) HCRS as may be necessary to supplement consultation required by sections 3 and 4c, j, and k.

- g. BLM, FWS, HCRS and NPS shall act as advisors to the Area Oil and Gas Supervisors, GS, on matters within their respective responsibilities and recognized expertise in the areas of activity and in those instances outlined in Section 4f. In implementing consultations, GS will transmit the appropriate documents and information to representatives of BLM, FWS, HCRS and NPS. BLM, FWS, HCRS and NPS will submit comments to GS as soon as practical but not later than 30 days after the plan or document has been received, except in the case of exploration plans the period will be 20 days. GS will defer approval of requests, plans or permits until the Bureaus have submitted comments or 30 days have passed from receipt of the documents by the Bureaus, whichever occurs first, except in the case of exploration plans the period will be 20 days.
- h. In addition to other requirements for coordination and consultation, all Departmental Bureaus are required to keep other bureaus with OCS responsibilities informed of activities for which they have primary responsibility and which may affect the OCS minerals program. This duty to inform includes timely distribution of documents with adequate explanations of pertinence to the OCS minerals program, and an adequate opportunity for all interested bureaus to comment prior to the time final action is taken on a proposed activity.
- i. BLM, FWS and GS shall specify and design any biological sampling or monitoring requirements and plans in connection with special lease stipulations for the protection of biological resources. The plans will contain survey and data collection requirements as may be necessary to comply with special lease stipulations. Any changes to the plans will be made only after consultation with the agencies and offices affected. All biological survey reports submitted to Supervisors by lessees shall be expeditiously provided to FWS and BLM for review and comment prior to acceptance of final reports.
- j. HCRS shall make recommendations to implement special lease stipulations on cultural resources.
- k. BLM and GS shall provide HCRS with information on cultural resources discoveries and shall notify HCRS if operational activities indicate the presence of cultural resources.

#### Sec. 5 Committees

- a. A committee shall be formed at the headquarters level consisting of representatives from AS/PBA, BLM, FWS, GS, HCRS, NPS and the Solicitor's Office to serve as the formal mechanism for coordination and planning, and for providing a forum for the exchange of views among the participants. The chairperson of the committee will be a representative of AS/PBA. Meetings will be scheduled as needed and convene at the call of the chairperson. Provisions will be made for convening meetings at the call of any participating bureau of office.

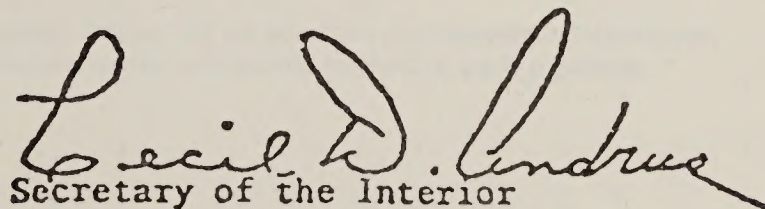


- b. Field level committees shall be formed for Mid and North Atlantic, South Atlantic, Gulf of Mexico, Pacific, Alaska and any other regions where OCS field operations are centered, and will consist of representatives from the bureaus listed in Section 5a. The field-level committees will serve as the formal field-level mechanism for coordination and planning, implementing the provisions in Sections 1 through 4, and providing a forum for the exchange of views among the participants. The chairpersons of field committee meetings shall be the top ranking field level official of the bureau requesting the meeting, or the Special Assistant to the Secretary when the Special Assistant requests a meeting. Provisions will be made for convening meetings at the call of any participating bureau. The members of the committee may, by mutual agreement, decide to confer by telephone rather than meet as a group.
- c. This Order does not diminish the authorities or responsibilities of the Special Assistants to the Secretary in the field. The Special Assistants may, at their discretion, convene and chair meetings under the authorities of this Order.
- d. The committees described in this Section shall be established and operated in accordance with the provisions of 308 DM 4.

**Sec. 6 Resolution of Disagreements.** If the bureaus disagree for good and sufficient reasons, on issues relating to the OCS minerals program, as dealt with in this Order, the dispute will be resolved as follows:

- a. If the issue first arises at the field level, it will be considered by the appropriate representatives of BLM, FWS, GS, HCRS and NPS. If the issue cannot be resolved satisfactorily in this manner, it will be referred for resolution to the concerned Bureau Directors at the Washington level.
- b. If it is a policy issue or one which is otherwise handled at headquarters level, and remains unresolved after referral to Bureau Directors, the issue will be referred for resolution through the appropriate Assistant Secretaries to AS/PBA.

**Sec. 7 Effective Date.** This Order is effective immediately. Its provisions shall remain in effect until the Order is amended, superseded or revoked, whichever occurs first. However, in the absence of the foregoing actions, the provisions of this Order shall terminate on September 30, 1980.

  
Secretary of the Interior

Date: AUG 9 1978







# MEMORANDUM OF UNDERSTANDING BETWEEN THE BUREAU OF LAND MANAGEMENT AND THE GEOLOGICAL SURVEY FOR OUTER CONTINENTAL SHELF PIPELINES

This Memorandum of Understanding is entered into in order to define clearly the administrative and operational roles of the Bureau of Land Management (BLM) and the Geological Survey (USGS) relating to pipelines on the Outer Continental Shelf (OCS), to provide consistent and standardized procedures, and to minimize or eliminate dual and overlapping functions.

Unless otherwise provided herein, pipelines are defined as any line transporting oil, gas, water, sulphur or other minerals, including lines sometimes referred to as flow or gathering lines.

The objectives of this Memorandum of Understanding are to:

- A. Provide an efficient mechanism for approving pipeline routes through the submerged lands of the OCS.
- B. Initiate measures to provide safety and to minimize or eliminate environmental damage which may be associated with the installation and operation of pipelines originating on the OCS.
- C. Be responsive to the interests of the oil and gas industry, other users of the OCS, and the public with respect to pipelines.
- D. Streamline implementation of the regulations and procedures for more efficient and uniform administration of the Department's authority with respect to pipelines.

## PIPELINE MANAGEMENT

### I. BLM Role.

- A. Conduct pipeline routing studies and, with the concurrence of the USGS, designate pipeline corridors on the OCS for all pipelines other than flow or gathering lines within the confines of a single lease or group of contiguous leases under unitized operation or a single operator.
- B. Maintain a central office of record for the location of all existing and future pipelines as specified in paragraph I.A. and associated structures on the OCS.
- C. Receive applications for rights-of-way for pipelines to be installed on the OCS pursuant to 43 U.S.C. 1334(c) and 43 CFR 2883.
- D. Prepare environmental assessments, pipeline system planning studies, economic studies, and environmental impact statements when necessary or appropriate, prior to approving applications for rights-of-way pursuant to 43 U.S.C. 1334(c) and 43 CFR 2883.
- E. After considering the potential impact of the pipeline on the environment, the relationship of the application to existing pipeline routes on the OCS, and other factors, approve or disapprove the application pursuant to 43 CFR 2883.
- F. Conduct field studies relating to the long range environmental impact of all pipelines and associated structures, thereby providing a basis for continuous assessment of existing environmental safeguards applied to such pipelines.

### II. USGS Role.

- A. Consider all applications from a lessee or operator for a right of use and easement to construct and maintain pipelines and associated structures on the OCS pursuant to 30 CFR 250.18 and 250.19. Prior to granting approval of such applications for any pipeline other than flow or gathering lines within the confines of a single lease or group of contiguous leases under unitized operation or a single operator, consult with the BLM so that the routing of such pipelines may be coordinated with existing lines or designated pipeline corridor.



B. Review technical aspects of OCS pipeline design, installation, maintenance and operation in accordance with appropriate regulations and standards designed for safety and environmental protection, and to avoid undue interference with other uses of the OCS and its superjacent waters.

C. Prepare environmental assessments or impact statements when necessary prior to approving applications filed pursuant to 30 CFR 250.18 and 250.19.

D. Provide the BLM with the location, as installed, of all pipelines approved by the USGS as specified in paragraph II.A.

### PROCEDURES

1. BLM will receive right-of-way applications pursuant to 43 CFR 2883 for pipelines and associated structures for the transportation of oil, gas, sulphur and other minerals on the OCS. A copy of the application will be sent to USGS for review. The reviews by USGS will focus on the technical aspects of OCS pipeline design, installation, maintenance and operation in accordance with appropriate regulations and standards designed for safety and environmental protection, and to avoid undue interference with other uses of the OCS and its superjacent waters. The BLM will issue a decision granting the right-of-way after having been notified in writing by the USGS that the technical aspects of the proposed pipeline are acceptable. BLM will prepare environmental assessments and impact statements prior to granting such pipeline rights-of-way when necessary or appropriate.

2. The USGS will approve rights of use and easement for gathering and flow lines pursuant to 30 CFR 250.18 and 250.19. For any such pipelines other than flow or gathering lines within the confines of a single lease or group of contiguous leases under unitized operation or a single operator, the USGS will transmit a copy of the pipeline application to the BLM. The BLM will review the application as to whether the pipeline route conflicts with any existing or proposed pipeline and pipeline corridors or would otherwise not be consistent with good pipeline management for the OCS. The BLM will advise the USGS in writing of the results of its review prior to a USGS determination for approval or disapproval of the application.

3. The BLM will conduct field studies relating to the immediate and long term environmental impact of pipelines and associated structures on the OCS in order to assess the adequacy of environmental safeguards. Reports of the results of the BLM field studies with recommendations for minimizing the impact of pipelines on the environment will be released to the public and distributed to appropriate agencies with jurisdiction over pipelines on the OCS.

4. The BLM and USGS will periodically review existing procedures for reviewing applications and issuing rights-of-way and rights of use and easements and propose improvements in such procedures as appropriate. The procedures shall include the assessment of the environmental impact and the minimization of the number and locations of pipelines on the OCS.

5. The BLM and USGS will consult with each other in the preparation of environmental analyses and impact statements and will also consult with the Bureau of Sport Fisheries and Wildlife, the National Park Service, the Bureau of Outdoor Recreation, and other Federal and State agencies as appropriate.

6. The BLM will assume the responsibility for overall studies of pipeline routing on the OCS and, with the concurrence of the USGS, designate pipeline corridors for all pipelines other than flow or gathering lines within the confines of a single lease or group of contiguous leases under unitized operation or a single operator. To assist in this, the USGS will furnish BLM with a copy of all approvals and drawings showing the proposed and installed locations of all pipelines, as described in this paragraph, and associated structures erected in connection with approvals of rights of use and easements.

Aug. 1, 1974

Date

V. E. McKELVEY

Director, USGS

Aug. 1, 1974

Date

GEORGE L. TURCOTT

Actg. Director, BLM



APPENDIX F  
PROXIMITY ANALYSIS

1. Purpose: This section presents a summary numerical analysis, in matrix format, of the potential or anticipated impacts of Sale No. 48 structural development, by tract, upon major resource components. The matrix analysis portrays: a) distance from the closest land mass to the center of each tract; b) approximate water depth of the tract; and c) an unweighted numerical index which gauges the anticipated impact of structural development of each tract upon environmental components.

2. Rating System: The numerical indexes of anticipated impact that appear on the accompanying matrix charts have been derived from an impact scale of 0-10 (zero to extreme) that is more fully described below in relation to each environmental component. All impact ratings fall within the general form below.

<u>0</u>	no impact
1	
2	low impact
<u>3</u>	
4	
5	moderate impact
<u>6</u>	
7	
8	high impact
<u>9</u>	
10	extreme impact

Accompanying this section is a histogram (Figure F.) showing the frequency distribution of tract-average anticipated degree of impact. The mean anticipated degree of impact for the 217 tracts of proposed Oil and Gas Lease Sale No. 48 is 2.4 (low).

3. Environmental Components: The tracts proposed for offering in this sale have been evaluated with respect to their proximity to significant resource elements. Several similar resource elements may have been included together under one of the environmental



# IMPACT RANGE

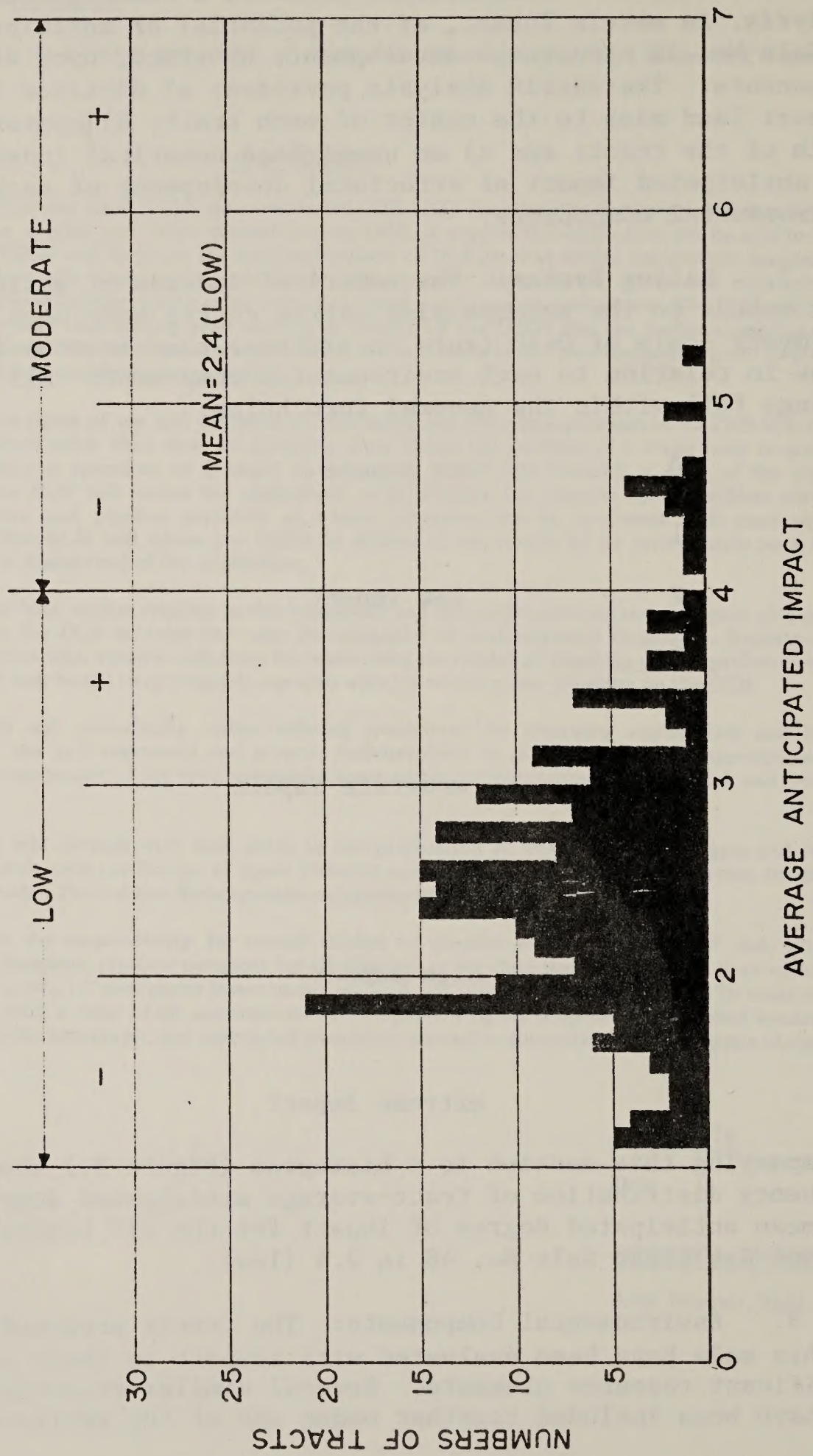


Figure F. Histogram of Tract Average Anticipated Impact.



components that appear on the horizontal axis of the matrix. The generalized environmental components are:

Aesthetics	Bird Concentrations
Cultural Resources	Seals and Sea Lion Concentrations
Recreation	Commercial Fishing
Refuges and Wildlife Management Areas	Shipping and Utilities
Endangered Species	Military Uses

The following discussion on environmental components includes descriptions of the resource elements considered under each of the component headings, and it also details the methods or parameters by which the numerical index was derived.

A. Aesthetic Resource Components. The analysis presented under this component measures the anticipated impact of an oil and gas development structure based upon its proximity to a land mass. It does not consider viewpoints located on the water as this would raise all tracts, except those on the outer banks, to the highest levels because of boater mobility. This would render any reasoned analysis based upon this matrix, impossible to perform. The following scale has been used:

DISTANCE FROM SHORE

IMPACT RATING

0 - 1 km	10
1 - 3	9
3 - 5.5	8
5.5 - 7	7
7 - 10.5	6
10.5 - 14.5	5
14.5 - 18	4
18 - 22.5	3
22.5 - 29	2
29 - 32	1
>32	0

Cultural Resources. This component shows an averaged rating for five cultural resource elements that may be impacted by oil and gas structural development as a result of Sale No. 48. The averaged impact rating may not reflect the actual anticipated impact for any one of the resource elements included (Impacts to specific elements are discussed in Chapter III). The five elements rated under this component are:



- (a) Shipwreck probability zones.
- (b) Aboriginal site probability zones.
- (c) Known shipwreck sites.
- (d) Known aboriginal sites
- (e) Proximity to historical sites.

Shipwreck probability zones are classified as levels I, II, and III in descending order of occurrence likelihood. Numeric ratings range from zero, indicating no impact possible, to ten, indicating either damage or destruction of the resource is imminent during construction or structural emplacement, or structural development will make discovery of the resource difficult or impossible.

Aboriginal probability zone impact ratings have been generated in the same manner as shipwreck probability zones.

An analysis of impacts on known shipwreck sites has been made based upon distance from tract center to sites within 0.8 km (1/2-mile) of tract limits. Sites outside this limit were judged to have no anticipated impact from structural development, while sites within 0.8 km of tract center are expected to realize the maximum impact potential.

#### Impact Scale for Known Wreck Sites:

0	-	1/2 mile	=	10	Extreme impact
1/2	-	1 1/2 miles	=	9	
1 1/2	-	2 1/2 miles	=	8	High impact
2 1/2	-	3 1/2 miles	=	7	
3 1/2	-	4 1/2 miles	=	6	

#### Impact Scale for Wrecks Sunk in the General Area:

0	-	1/2 mile	=	7	
1/2	-	1 1/2 miles	=	6	
1 1/2	-	2 1/2 miles	=	5	Moderate impact
2 1/2	-	3 1/2 miles	=	4	
3 1/2	-	4 1/2 miles	=	3	
4 1/2	-	5 1/2 miles	=	2	Low impact
5 1/2	-	10 miles	=	1	
	-	>10 miles	=	0	No impact

There are no known aboriginal sites on or near the tracts being considered in this proposal, thus they have not been rated. Significant terrestrial historic sites will not be physically affected by OCS structures, but their usual environment may be altered. A scale has been developed which rates this impact potential based on distance from the site to the tract center.



1 1/2			10	
1 1/2	-	2 1/2 miles =	9	Moderate impact
2 1/2	-	3 1/2 miles =	8	
3 1/2	-	4 1/2 miles =	7	
4 1/2	-	5 1/2 miles =	6	
5 1/2	-	9 miles =	5	Slight impact
9	-	11 miles =	4	
11	-	13 miles =	3	Perceptible impact

Recreation. The evaluation of this component considers the positive and negative impacts of structural development upon such recreational activities as diving, sportfishing and recreational boating. The component rating is an average of individually-rated resource elements. The rating criteria for each resource element follows:

#### Diving

- 0 No impact or not in a diving area.
- 1 Minor impact to a possible diving area, but no quantifiable alteration or
- 2 destruction of the diving area although (theoretical probability) some
- 3 deleterious effects due to activity.
- 4 Moderate impact to known diving areas
- 5 of moderate use.
- 6
- 7 High impact to known diving area with
- 8 heavy use. Development may result
- 9 in alteration or loss of part of the diving area.
- 10 Extreme impact. Structural development will result in the loss or destruction of all or a significant portion of a known diving area.

#### Sportfishing

- 0 No impact or no known sportfishing activities.
- 1 Near known sportfishing areas;
- 2 includes positive impacts of artificial
- 3 habitat over flat bottom areas.



- 4      Within a known sportfishing area.  
Possible beneficial impact by providing
- 5      artificial habitat although species may
- 6      change (e.g. flatfish to rockfish).
  
- 7      Within a known sportfishing area of high use.
- 8      Low beneficial impact anticipated, if
- 9      any.
  
- 10     Within a known high-use sportfishing area  
resulting in loss or destruction of  
significant portions of the fishing area.  
No beneficial impacts known.

#### Recreational Boating

- 0      No impact or not in a general boating area.
  
- 1      Minor impact to low use area within a
- 2      major use zone. Includes beneficial
- 3      impacts as navigational aid.
  
- 4      Moderate impact. Tract lies within a
- 5      major use zone, near major recreational
- 6      boating routes, and may result in altera-
- 6      tion in the use of the area.
  
- 7      High impact. Tract lies within a major
- 8      use zone and within a major boating route.
- 9      Significant alteration of area use
- 9      and boating routes anticipated.
  
- 10     Severe impact. Anticipated disruption
- 10     of major boating use which requires
- 10     alteration of major boating routes.

Refuges/Wildlife Management Areas/Endangered Species. The following scale has been used to evaluate the anticipated impact of the structural development of tracts of proposed Oil and Gas Lease Sale No. 48 on refuges, wildlife management areas and endangered species.

This analysis does not include those areas discussed in II.F.5, "unique biological areas," as these areas have not been officially designated.

- 0      No impact known nor anticipated.
- 1      Minor impact, but no quantifiable altera-
- 2      tion nor destruction of habitat.



- 3 High probability of some deleterious effects due to human activity.
- 4 Moderate impact resulting in probable
- 5 alteration of a portion of the resource.
- 6 Serious impact resulting in alteration
- 7 of part of the resource.
- 8 Severe impact resulting in destruction
- 9 or alteration of part of the resource.
- 10 Severe impact resulting in destruction of a major portion or all of the resource.

Marine Bird Concentrations. Evaluations of impacts on bird concentrations includes those short-term disruptions expected from structure or pipeline placement and the long-term effects of structural presence, human disturbance, and attraction. The assumption has been made that structural presence may disturb or disrupt some marine bird resting and feeding activities while attracting other species due to increased food around a structure, and providing alternate resting areas, etc. Anticipated degree of impact from structural development of Sale No. 48 tracts is derived by use of the following scale:

0 = no impact

1-3 = low impact: some foraging area disruption due to structure presence and associated human activity.  
25% of population affected in the tract.

1 = <20 birds/km <sup>2</sup>	)	Based on maximum marine bird
	)	
2 = 20-54 birds/km <sup>2</sup>	)	concentrations for the tracts
	)	
3 = >54 birds/km <sup>2</sup>	)	found in the 1975-76 BLM Baseline Survey.

4-6 = moderate impact: 25-50% of population in tract affected.

7-9 = high impact: 50-75% of population in tract affected.

10 = extreme impact: 75-100% of population in tract affected.

Seals and Sea Lion Concentrations. Because sound, particularly low-frequency sound, travels several miles through water before it is attenuated, the following scale has been used to evaluate the possible impact of Sale No. 48 structural development and drilling upon seals and sea lion concentrations.



- 0 No impact. Rating withheld until experimental evidence substantiates no interference with pinniped feeding during drilling.
- 1 Low impact. Distance to rookery is greater than twelve miles.
- 2 Tract is within twelve miles, or tract is between six and nine miles (straight-line distance) with sound
- 3 path interrupted by land mass (i.e. peninsula).
- 4 Moderate impact as tract lies between
- 5 nine and twelve miles of pinniped
- 6 rookery.
- 7 Moderate impact. Tract is between
- 8 six and nine miles of large and/or
- 9 highly important rookery.
- 10 Extreme impact. Tract within less than six miles of rookery. Rating withheld until experimental evidence indicates that the abandonment of rookeries as high probability of occurrence.

All ratings include the positive impact of fish attraction resulting in a rich feeding area after drilling activities are completed.

Commercial Fisheries. Anticipated impacts to commercial fishing areas from oil and gas developments of Sale No. 48 were determined using the following scale.

- X Impacts unknown.
- 0 No impacts on commercial fishing activities.
- 1 Low impact on commercial fishing activities; structural development located near an area of
- 2 known commercial fishing, but judged not to be significant in terms of
- 3 navigational hazard to fishing vessels.
- 4 Moderate impact; structural development located within an area of known
- 5 fishing activities, but not within
- 6 major fishing grounds.



- 7 High impact; structural development located within an area of known
- 8 commercial fishing activities and
- 9 within major fishing grounds.
- 10 Extreme impact; development located within major commercial fishing grounds and will prohibit operations or pose operational hazard.

Shipping and Utilities. Relating value of impacts between vessels in shipping lanes, see Table F-1 and Petroleum Activities (Fixed Structures and Crew-Supply Boats Servicing These Structures).

Table F-1  
TABLE OF VALUES

Shipping Lanes	Relative Impact Values <sup>a</sup>				Boat Crossing a Sea Lane
	Sea Lanes (a)	Separation Zone (b)	2-Mile Zone <sup>b</sup>	Beyond 2-Mile Zone	
Santa Barbara Channel	8.0	4.0	2.0	0.0	1/4
Gulf of Cataline	6.2	3.1	1.5	0.0	1/4
Santa Rosa - Santa Barbara Island	5.4	2.7	1.4	0.0	1/4
San Diego - Los Angeles Long Beach	1.4	0.7	0.4	0.0	1/4

<sup>a</sup>Value depends on the sea-lane vessel-traffic density.

<sup>b</sup>Two miles outward from the outer edges of shipping lane (2 sealanes and a separation zone).

No Impact (0)

Tracts that are located outside of the 2 mile zone with no crossing of the sea lanes by the servicing boats. The 2 mile zone is an assumed area which is located 2 miles outward from the shipping lane (2 sea lanes and a separation zone). The servicing boats are those crew and supply boats that travel between the offshore petroleum structure and the onshore ports.



Low Impact (1, 2, 3)

Tracts that are located outside of the shipping lanes with relatively low to moderate crossing of the sea lanes by servicing boats.

Moderate Impact (4, 5, 6)

Tracts that are located in a separation zone or within the 2 mile zone outward of the lanes with relatively moderate to high crossing of the sea lanes by servicing boats.

High Impact (7, 8, 9)

Tracts that are located in sea lanes having relatively moderate to high sea lane traffic and moderate to high crossing of sea lanes by servicing boats.

Extreme Impact (10)

Tracts that are located in the sea lanes with relatively high vessel traffic and relatively high crossing of the sea lanes by servicing boats.

Unknown Impact (X) Not indicated.

Military Uses. All tracts are in a designated military operations area and development could impact operations. The rating criteria below have been used to evaluate the impact of structural development upon military uses.

- 0 No impact, or no military traffic passing through except in cases of emergency.
- 1 Low impact due to no scheduled military activity, but occasional
- 2 military traffic to a scheduled
- 3 area of patrol.
- 4 Moderate impacts within an active military operating area. DOD has
- 5 indicated that within some frame-
- 6 work, co-utilization can be worked out.



- 7 High impact due to conflict with  
8 submarine transit lanes, fixed  
9 support or associated facilities  
which cannot be moved. Possible  
safety problems.
- 10 Extreme impact in very high use areas  
involving submarines, aircraft  
carriers, or classified operations,  
etc. Military reaction strong with  
unwillingness to co-utilize.



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS										DEGREE OF IMPACT									
			CULTURAL RESOURCES		RECREATION		REFUGES / WILDLIFE MANAGEMENT AREAS		ENDANGERED SPECIES		BIRD CONCENTRATIONS		SEALS & SEA LION CONCENTRATIONS		COMMERCIAL FISHING		SHIPPING & UTILITIES		MILITARY USES		ANTICIPATED	
SBC-001	27.8	575	2	1	0	0	0	2	3	1	0	4	5	1.8								
002	23.0	475	2	2	0	0	0	2	3	1	0	4	5	1.9								
003	18.3	325	3	3	0	0	0	2	3	1	0	2	5	1.9								
004	13.5	150	5	5	0	0	0	2	3	1	0	2	5	2.3								
005	9.0	95	6	8	0	0	0	2	3	1	0	2	5	2.7								
006	6.5	85	7	7	0	0	0	2	3	1	0	2	5	2.7								
007	28.5	710	2	1	0	0	0	2	3	1	0	10	5	2.4								
008	24.0	545	2	2	0	0	0	2	3	1	0	10	5	2.5								
009	20.3	440	3	2	0	0	0	2	3	1	0	4	5	2.0								



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS										DEGREE OF IMPACT									
			CULTURAL RESOURCES		RECREATION		REFUGES / WILDLIFE MANAGEMENT AREAS		ENDANGERED SPECIES		BIRD CONCENTRATIONS		SEALS & SEA LION CONCENTRATIONS		COMMERCIAL FISHING		SHIPPING & UTILITIES		MILITARY USES		ANTICIPATED	
SBC-010	15.5	275	4	4	0	0	0	2	3	1	0	4	5	2.3								
011	10.5	175	6	5	0	0	0	2	3	1	0	4	5	2.6								
012	7.0	120	7	8	0	0	0	2	3	1	0	2	5	2.8								
013	25.8	600	2	1	0	0	0	2	3	1	0	6	5	2.0								
014	21.3	525	3	2	0	0	0	2	3	1	0	6	5	2.2								
015	16.8	395	4	3	0	0	0	2	3	1	0	6	5	2.4								
016	12.5	335	5	4	0	0	0	2	3	1	1	10	5	2.9								
017	9.0	260	6	5	0	0	0	2	3	1	1	4	5	2.7								
018	10.0	325	6	2	2	0	0	2	2	1	3	2	5	2.5								



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS			CULTURAL RESOURCES			RECREATION			REFUGES / WILDLIFE MANAGEMENT AREAS			ENDANGERED SPECIES			BIRD CONCENTRATIONS			SEALS & SEA LION CONCENTRATIONS			COMMERCIAL FISHING			SHIPPING & UTILITIES			MILITARY USES			DEGREE OF IMPACT		
SBC-019	7.0	200	7	3	2	0	2	1	1	1	3	2	5	2.6																					
020	6.0	200	7	4	4	0	2	1	1	1	3	2	5	2.9																					
021	23.5	555	2	2	0	0	2	3	1	1	0	4	5	1.9																					
022	19.5	455	3	3	0	0	2	3	1	1	0	9	5	2.6																					
023	16.0	460	4	4	0	0	2	3	1	1	0	9	5	2.8																					
024	13.0	400	5	4	0	0	2	3	1	1	1	6	5	2.7																					
025	11.5	355	5	4	1	0	2	1	1	1	1	6	5	2.5																					
026	14.0	425	5	4	2	0	2	2	1	1	1	2	5	2.4																					
027	12.5	535	5	4	2	0	2	1	1	1	1	2	5	2.3																					



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS			CULTURAL RESOURCES			RECREATION			REFUGES / WILDLIFE MANAGEMENT AREAS			ENDANGERED SPECIES			BIRD CONCENTRATIONS			SEALS & SEA LION CONCENTRATIONS			COMMERCIAL FISHING			SHIPPING & UTILITIES			MILITARY USES			ANTICIPATED DEGREE OF IMPACT		
SBC- 028	10.0	510	6	4	2	0	2	0	0	2	1	1	1	1	2	5	2.4																		
029	8.8	425	6	6	2	0	2	0	0	2	1	1	1	1	2	5	2.6																		
030	7.5	400	6	7	4	0	2	0	0	2	3	1	1	0	2	5	2.4																		
031	22.5	525	3	2	0	0	2	0	0	2	1	1	1	0	2	5	1.6																		
032	20.0	505	3	2	0	0	2	0	0	2	1	1	1	0	4	5	1.8																		
033	17.5	470	4	4	0	0	2	0	0	2	1	1	1	0	4	5	2.1																		
034	16.5	450	4	4	1	0	2	0	0	2	1	1	1	0	4	5	2.2																		
035	16.5	390	4	4	1	0	2	0	0	2	1	1	1	0	9	5	2.7																		
036	17.5	375	4	3	1	0	2	0	0	2	1	1	1	0	6	5	2.3																		



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS			CULTURAL RESOURCES			RECREATION REFUGES / WILDLIFE MANAGEMENT AREAS			ENDANGERED SPECIES			BIRD CONCENTRATIONS			SEALS & SEA LION CONCENTRATIONS			COMMERCIAL FISHING			SHIPPING & UTILITIES			MILITARY USES			ANTICIPATED DEGREE OF IMPACT		
			4	2	1	0	2	2	2	2	1	0	6	5	2.3																	
SBC-037	17.5	380	4	2	1	0	2	2	2	2	1	0	6	5	2.3																	
038	18.0	480	4	3	1	0	2	2	2	2	1	0	10	5	2.8																	
039	18.5	475	3	3	1	0	2	2	2	2	1	0	10	5	2.7																	
040	18.0	520	4	3	1	0	2	2	3	3	1	0	4	5	2.3																	
041	17.0	560	4	3	1	0	2	2	3	3	1	0	4	5	2.3																	
042	17.0	560	4	3	1	0	2	2	3	3	1	0	4	5	2.3																	
043	14.5	560	5	4	1	0	2	1	3	1	1	0	2	5	2.1																	
044	12.5	520	5	4	1	0	2	2	1	1	1	0	2	5	2.1																	
045	11.5	448	5	4	1	0	2	2	3	3	1	0	2	5	2.3																	



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	DEGREE OF IMPACT											
			AESTHETICS	CULTURAL RESOURCES	RECREATION	REFUGES / WILDLIFE MANAGEMENT AREAS	ENDANGERED SPECIES	BIRD CONCENTRATIONS	SEALS & SEA LION CONCENTRATIONS	COMMERCIAL FISHING	SHIPPING & UTILITIES	MILITARY USES	ANTICIPATED	
SBC-046	8.0	120	6	7	2	0	2	3	1	5	0	5	3.1	
047	6.5	40	7	7	4	0	2	3	1	4	0	5	3.4	
048	27.0	580	2	2	0	0	2	1	1	0	2	5	1.5	
049	24.5	575	2	2	0	0	2	1	1	0	2	5	1.5	
050	22.5	520	3	4	0	0	2	1	1	0	2	5	1.8	
051	21.0	475	3	4	0	0	2	1	1	0	2	5	1.8	
052	20.5	449	3	4	1	0	2	1	1	0	2	5	1.8	
053	20.0	425	3	3	1	0	2	1	1	0	4	5	1.9	
054	21.0	445	3	2	1	0	2	2	1	0	4	5	1.9	



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS		CULTURAL RESOURCES		RECREATION		REFUGES / WILDLIFE MANAGEMENT AREAS		ENDANGERED SPECIES		BIRD CONCENTRATIONS		SEALS & SEA LION CONCENTRATIONS		COMMERCIAL FISHING		SHIPPING & UTILITIES		MILITARY USES		DEGREE OF IMPACT	
SBC-055	23.0	475	2	2	2	1	1	0	2	2	2	2	1	1	0	0	9	5	5	2.4				
056	23.5	515	2	2	2	1	1	0	2	2	2	2	1	1	0	0	9	5	5	2.4				
057	23.0	555	2	2	2	1	1	0	2	2	3	3	1	1	0	0	6	5	5	2.2				
058	22.0	575	3	2	2	1	1	0	2	2	3	3	1	1	0	0	6	5	5	2.3				
059	21.0	575	3	2	2	1	1	0	2	2	3	3	1	1	0	0	10	5	5	2.7				
060	19.5	565	3	2	2	1	1	0	2	2	1	1	1	1	0	0	4	5	5	1.9				
061	17.0	545	4	2	2	1	1	0	2	2	1	1	1	1	0	0	4	5	5	2.0				
062	15.5	500	4	2	2	3	3	0	2	2	3	3	1	1	0	0	4	5	5	2.4				
063	14.8	108	4	5	5	1	1	0	2	2	3	3	1	1	2	0	0	5	5	2.3				



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS	CULTURAL RESOURCES	RECREATION	REFUGES / WILDLIFE MANAGEMENT AREAS	ENDANGERED SPECIES	BIRD CONCENTRATIONS	SEALS & SEA LION CONCENTRATIONS	COMMERCIAL FISHING	SHIPPING & UTILITIES	MILITARY USES	DEGREE OF IMPACT
SBC-064	8.5	59	6	2	0	2	3	1	4	0	5	2.9	
065	6.5	45	6	3	0	2	3	1	7	0	5	3.4	
066	16.0	480	2	0	0	2	2	1	0	1	5	1.7	
067	18.5	492	2	0	0	2	2	1	0	1	5	1.6	
068	21.3	535	2	0	0	2	2	1	0	3	5	1.8	
069	21.3	560	2	0	0	2	3	1	0	3	5	1.9	
070	20.5	610	2	0	0	2	3	1	0	9	5	2.5	
071	20.0	610	2	0	0	2	3	1	0	9	5	2.5	
072	17.5	590	2	1	0	2	1	1	0	6	5	2.2	



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS			CULTURAL RESOURCES			RECREATION			REFUGES / WILDLIFE MANAGEMENT AREAS			ENDANGERED SPECIES			BIRD CONCENTRATIONS			SEALS & SEA LION CONCENTRATIONS			COMMERCIAL FISHING			SHIPPING & UTILITIES			MILITARY USES			ANTICIPATED DEGREE OF IMPACT		
			4	2	3	0	2	1	1	0	2	3	1	1	0	2	3	1	0	6	5	2.4													
SBC-073	16.5	560	4	2	3	0	2	1	1	0	2	3	0	2	1	1	0	6	5	2.4															
074	16.5	520	4	2	1	0	2	3	1	0	2	1	0	2	3	1	0	6	5	2.4															
075	11.5	65	5	5	2	0	2	3	1	0	2	3	0	2	3	1	3	0	5	2.6															
076	9.3	40	6	5	5	0	2	3	1	0	2	3	0	2	3	1	7	0	5	3.4															
077	12.0	425	5	3	0	0	2	2	8	0	2	2	0	2	2	8	0	1	5	2.6															
078	14.5	460	5	2	0	0	2	2	7	0	2	2	0	2	2	7	0	1	5	2.4															
079	17.0	475	4	2	0	0	2	2	3	0	2	2	0	2	2	3	0	1	5	1.9															
080	16.5	510	4	2	0	0	2	3	1	0	2	3	0	2	3	1	0	1	5	1.8															
081	16.0	540	4	2	0	0	2	3	1	0	2	3	0	2	3	1	0	1	5	1.8															



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS			CULTURAL RESOURCES			RECREATION REFUGES / WILDLIFE MANAGEMENT AREAS			ENDANGERED SPECIES			BIRD CONCENTRATIONS			SEALS & SEA LION CONCENTRATIONS			COMMERCIAL FISHING			SHIPPING & UTILITIES			MILITARY USES			ANTICIPATED DEGREE OF IMPACT		
SBC-082	15.0	560	4	2	1	0	0	2	3	1	0	3	1	0	3	5	2.1															
083	13.3	560	5	2	3	0	0	2	1	1	0	3	1	0	3	5	2.2															
084	11.5	520	5	2	1	0	0	2	1	1	0	9	5	2.6																		
085	12.0	490	5	2	1	0	0	2	3	1	0	9	5	2.8																		
086	12.5	449	5	2	1	0	0	2	3	1	0	6	5	2.5																		
087	6.8	23	7	6	4	0	0	2	3	1	9	0	5	3.7																		
088	11.5	350	5	4	0	0	0	2	3	3	1	2	5	2.5																		
089	11.3	380	5	3	1	0	0	2	3	2	1	1	5	2.3																		
090	10.5	360	6	3	3	0	0	2	3	3	1	1	5	2.7																		



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS			CULTURAL RESOURCES			RECREATION			REFUGES / WILDLIFE MANAGEMENT AREAS			ENDANGERED SPECIES			BIRD CONCENTRATIONS			SEALS & SEA LION CONCENTRATIONS			COMMERCIAL FISHING			SHIPPING & UTILITIES			MILITARY USES			ANTICIPATED DEGREE OF IMPACT		
SBC-091	8.8	250	6	4	1	2	2	2	1	8	1	1	5	3.1																					
092	7.3	190	6	4	1	2	2	2	1	3	4	1	5	2.9																					
093	7.5	325	6	5	1	2	2	2	3	7	5	3	5	3.9																					
094	8.0	250	6	2	1	2	2	2	3	7	5	3	5	3.8																					
095	9.5	325	6	2	1	2	2	2	3	8	6	3	5	3.8																					
096	9.5	335	6	2	3	2	2	2	3	8	6	9	5	4.6																					
097	11.0	225	5	3	1	0	3	3	7	7	9	5	4.2																						
098	7.0	92	7	6	2	2	2	2	3	3	1	2	5	3.3																					
099	7.5	88	6	6	4	2	2	2	3	3	1	2	5	3.4																					



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS		CULTURAL RESOURCES		RECREATION		REFUGES / WILDLIFE MANAGEMENT AREAS		ENDANGERED SPECIES		BIRD CONCENTRATIONS		SEALS & SEA LION CONCENTRATIONS		COMMERCIAL FISHING		SHIPPING & UTILITIES		MILITARY USES		ANTICIPATED DEGREE OF IMPACT	
SBC-100	7.0	95	7	5	2	2	2	2	2	2	3	7	1	2	5	3.6								
101	7.0	95	7	4	2	2	2	2	2	2	1	8	1	2	5	3.4								
102	6.0	175	7	4	1	2	2	2	2	2	3	8	7	2	5	4.1								
103	6.5	189	7	4	2	2	2	2	2	2	3	8	7	4	5	4.4								
104	6.8	255	7	3	1	2	2	2	3	3	3	8	8	9	5	4.9								
105	7.5	215	6	4	1	2	2	2	3	3	3	8	8	5	5	4.5								
106	9.0	225	6	3	1	2	2	2	3	3	3	8	7	5	5	4.3								
107	6.5	150	7	6	1	2	2	2	3	3	3	8	8	9	5	5.2								
108	6.5	200	7	5	1	2	2	2	3	3	3	7	7	9	5	4.9								



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS		CULTURAL RESOURCES		RECREATION		REFUGES / WILDLIFE MANAGEMENT AREAS		ENDANGERED SPECIES		BIRD CONCENTRATIONS		SEALS & SEA LION CONCENTRATIONS		COMMERCIAL FISHING		SHIPPING & UTILITIES		MILITARY USES		DEGREE OF IMPACT		
SR-109	13.5	190	5	4	0	0	0	0	2	3	1	0	1	5	2.1										
110	15.5	170	4	5	0	0	0	0	2	3	1	0	1	5	2.1										
111	18.3	125	3	2	0	0	0	0	2	3	1	0	1	5	1.7										
112	24.5	125	2	2	0	0	0	0	2	3	1	0	7	5	2.2										
113	27.5	555	2	2	0	0	0	0	2	3	1	0	7	5	2.2										
114	29.0	168	2	2	0	0	0	0	2	3	1	0	4	5	1.9										



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS		CULTURAL RESOURCES		RECREATION REFUGES / WILDLIFE MANAGEMENT AREAS		ENDANGERED SPECIES		BIRD CONCENTRATIONS		SEALS & SEA LION CONCENTRATIONS		COMMERCIAL FISHING		SHIPPING & UTILITIES		MILITARY USES		DEGREE OF IMPACT	
SBI-115	17.0	185	4	4	0	0	2	1	2	2	5	5	5	2.5								
116	12.5	225	5	3	2	0	2	1	3	2	1	5	2.4									
117	8.5	400	6	3	1	0	2	1	7	2	1	5	2.8									
118	8.5	325	6	4	1	0	2	1	3	2	1	5	2.5									
119	9.3	210	6	5	3	0	2	1	1	2	1	10	3.1									
SPB-120	8.0	50	6	7	3	1	2	3	1	9	8	4	4.4									
121	10.0	25	6	7	4	1	2	3	1	9	8	4	4.5									
122	7.5	26	6	7	3	1	2	3	1	8	8	6	4.5									



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS		CULTURAL RESOURCES		RECREATION		REFUGES / WILDLIFE MANAGEMENT AREAS		ENDANGERED SPECIES		BIRD CONCENTRATIONS		SEALS & SEA LION CONCENTRATIONS		COMMERCIAL FISHING		SHIPPING & UTILITIES		MILITARY USES		ANTICIPATED DEGREE OF IMPACT	
SPB-123	11.5	60	5	9	3	0	2	3	1	9	2	4	3.8											
124	9.5	41	6	7	2	0	2	3	1	8	7	9	4.5											
125	16.5	300	4	5	5	0	2	3	1	9	1	4	3.4											
126	17.5	120	4	6	5	0	2	3	1	9	2	4	3.6											
127	21.0	740	3	4	4	0	2	3	1	9	1	4	3.1											
128	19.5	350	3	4	2	0	2	3	1	8	7	4	3.4											
129	14.0	405	5	4	2	0	2	3	1	8	2	4	3.1											
130	10.8	400	5	4	2	1	2	1	1	7	1	4	2.9											
131	9.0	400	6	4	3	2	2	1	1	7	1	4	3.1											



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS		CULTURAL RESOURCES		RECREATION REFUGES / WILDLIFE MANAGEMENT AREAS		ENDANGERED SPECIES		BIRD CONCENTRATIONS		SEALS & SEA LION CONCENTRATIONS		COMMERCIAL FISHING		SHIPPING & UTILITIES		MILITARY USES		ANTICIPATED DEGREE OF IMPACT	
SPB-132	26.5	710	2	4	1	0	2	1	1	1	7	1	4	2.3								
133	24.5	450	2	3	1	0	2	1	1	1	8	7	4	2.9								
134	21.0	475	3	3	1	0	2	1	1	1	8	4	4	2.7								
135	15.0	500	4	3	1	0	2	1	1	1	7	1	4	2.4								
136	13.5	525	5	3	1	1	2	1	1	1	7	1	4	2.5								
137	10.0	560	6	4	2	2	2	1	1	1	7	1	4	3.0								
138	24.5	580	2	2	1	0	2	1	1	1	8	4	4	2.5								
139	16.8	575	4	3	1	0	2	1	1	1	7	1	4	2.4								
140	21.0	440	3	2	2	0	2	1	1	1	7	1	4	2.3								



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS			CULTURAL RESOURCES			RECREATION			REFUGES / WILDLIFE MANAGEMENT AREAS			ENDANGERED SPECIES			BIRD CONCENTRATIONS			SEALS & SEA LION CONCENTRATIONS			COMMERCIAL FISHING			SHIPPING & UTILITIES			MILITARY USES			ANTICIPATED DEGREE OF IMPACT		
DPSD-141	7.5	650	6	4	4	4	2	2	2	2	2	1	1	1	1	1	6	1	4	3.1															
142	9.0	665	6	3	2	2	2	2	2	2	2	1	1	1	1	1	6	1	4	2.8															
143	7.5	600	6	5	4	4	2	2	2	2	2	1	1	1	1	1	6	1	8	3.6															
144	13.0	610	5	3	1	1	0	2	2	2	2	1	1	1	1	1	6	1	4	2.4															
145	11.5	675	5	3	3	3	0	0	2	2	2	1	1	1	1	1	6	1	8	3.0															
146	14.8	742	4	3	1	1	0	2	2	2	2	1	1	1	1	1	6	1	8	2.7															
147	12.5	500	5	4	3	3	0	0	2	2	2	1	1	1	1	1	6	1	8	3.1															
148	16.0	800	4	3	3	3	0	0	2	2	2	1	1	1	1	1	6	1	8	2.9															
149	12.0	600	5	3	3	3	0	0	2	2	2	1	1	1	1	1	6	1	8	3.0															



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS		CULTURAL RESOURCES		RECREATION		REFUGES / WILDLIFE MANAGEMENT AREAS		ENDANGERED SPECIES		BIRD CONCENTRATIONS		SEALS & SEA LION CONCENTRATIONS		COMMERCIAL FISHING		SHIPPING & UTILITIES		MILITARY USES		DEGREE OF IMPACT	
DPSD-150	14.8	745	4	3	3	0	2	1	1	1	1	1	1	1	6	1	1	8	2.9					
151	24.0	775	2	2	0	0	2	1	1	1	1	1	1	1	4	1	1	8	2.1					
152	20.0	725	3	2	1	0	2	1	1	1	1	1	1	1	4	1	1	8	2.3					
153	23.0	725	2	2	0	0	2	1	1	1	1	1	1	1	4	1	1	9	2.2					
154	17.5	650	4	2	3	0	2	1	1	1	1	1	1	1	5	2	2	7	2.7					
155	16.8	675	4	2	4	0	2	1	1	1	1	1	1	1	5	1	1	7	2.7					
156	12.0	510	5	3	4	0	2	1	1	1	1	1	1	1	6	2	2	7	3.1					
157	22.0	925	3	2	4	0	2	1	1	1	1	1	1	1	5	1	1	7	2.6					
158	23.2	650	2	2	4	0	2	1	1	1	1	1	1	1	5	1	1	7	2.5					



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS			CULTURAL RESOURCES			RECREATION			REFUGES / WILDLIFE MANAGEMENT AREAS			ENDANGERED SPECIES			BIRD CONCENTRATIONS			SEALS & SEA LION CONCENTRATIONS			COMMERCIAL FISHING			SHIPPING & UTILITIES			MILITARY USES			ANTICIPATED DEGREE OF IMPACT		
DPSD-159	19.0	625	3	3	4	0	2	1	1	1	5	1	7	2.7																					
160	24.0	775	2	2	2	0	2	1	1	1	5	1	9	2.5																					
161	19.3	450	3	3	4	0	2	1	1	1	5	1	9	2.9																					
162	24.5	1110	2	2	2	0	2	1	1	1	5	1	9	2.5																					
163	19.8	200	3	3	3	0	2	1	1	1	5	1	9	2.8																					
164	14.8	355	4	4	3	0	2	1	1	1	5	1	9	3.0																					
165	16.0	135	4	4	3	0	2	1	1	1	4	1	9	2.9																					
166	11.5	190	5	4	3	0	2	1	1	1	4	1	9	3.0																					



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS										DEGREE OF IMPACT							
			CULTURAL RESOURCES		RECREATION		REFUGES / WILDLIFE MANAGEMENT AREAS		ENDANGERED SPECIES		BIRD CONCENTRATIONS			SEALS & SEA LION CONCENTRATIONS		COMMERCIAL FISHING		SHIPPING & UTILITIES		MILITARY USES
TCB-167	30.3	750	0	1	0	0	2	3	1	0	2	9	1.8							
168	28.5	475	0	1	0	0	2	3	1	0	2	9	1.8							
169	27.3	380	0	1	0	0	2	3	1	0	2	9	1.8							
170	26.5	550	0	1	0	0	2	3	1	0	2	9	1.8							
171	34.8	902	0	1	0	0	2	3	1	0	2	9	1.8							
172	33.0	700	0	1	0	0	2	3	1	0	2	9	1.8							
173	31.8	490	0	2	0	0	2	3	1	0	2	9	1.9							
174	31.0	185	0	2	0	0	2	3	1	0	2	9	1.9							
175	31.5	240	0	2	0	0	2	1	1	0	2	9	1.7							



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	DEGREE OF IMPACT										
			AESTHETICS	CULTURAL RESOURCES	RECREATION	REFUGES / WILDLIFE MANAGEMENT AREAS	ENDANGERED SPECIES	BIRD CONCENTRATIONS	SEALS & SEA LION CONCENTRATIONS	COMMERCIAL FISHING	SHIPPING & UTILITIES	MILITARY USES	
TCB-176	32.0	225	0	2	0	0	2	1	1	0	2	9	1.7
177	36.0	325	0	2	0	0	2	3	1	0	2	4	1.4
178	39.3	755	0	1	0	0	2	1	1	0	2	4	1.1
179	41.5	180	0	2	0	0	2	1	1	0	2	4	1.2
180	55.8	675	0	1	0	0	2	2	1	0	2	4	1.2
181	61.3	480	0	1	0	0	2	2	1	0	2	4	1.2
182	64.5	325	0	2	0	0	2	1	1	0	2	4	1.2
183	54.6	100	0	3	0	0	2	3	1	3	2	4	1.8
184	49.5	500	0	1	0	0	2	3	1	0	2	4	1.3



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS			CULTURAL RESOURCES			RECREATION REFUGES / WILDLIFE MANAGEMENT AREAS			ENDANGERED SPECIES			BIRD CONCENTRATIONS			SEALS & SEA LION CONCENTRATIONS			COMMERCIAL FISHING			SHIPPING & UTILITIES			MILITARY USES			ANTICIPATED DEGREE OF IMPACT		
TCB-185	46.3	760	0	1	0	0	0	0	2	1	1	1	0	2	4	1.1																
186	67.7	245	0	2	0	0	0	0	2	1	1	1	2	2	4	1.4																
187	56.8	225	0	3	0	0	0	0	2	3	1	1	3	2	4	1.8																
188	52.7	710	0	1	0	0	0	0	2	3	1	1	0	2	4	1.3																
189	44.0	655	0	1	0	0	0	0	2	1	1	1	0	2	4	1.1																
190	71.5	111	0	3	0	0	0	0	2	1	1	1	3	2	4	1.6																
191	72.1	130	0	3	0	0	0	0	2	1	1	1	3	2	4	1.6																
192	59.4	455	0	2	0	0	0	0	2	3	1	1	1	2	4	1.5																
193	50.7	1025	0	1	0	0	0	0	2	1	1	1	0	2	4	1.1																



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS										DEGREE OF IMPACT									
			CULTURAL RESOURCES		RECREATION		REFUGES / WILDLIFE MANAGEMENT AREAS		ENDANGERED SPECIES		BIRD CONCENTRATIONS		SEALS & SEA LION CONCENTRATIONS		COMMERCIAL FISHING		SHIPPING & UTILITIES		MILITARY USES		ANTICIPATED	
TCB-194	46.6	1100	0	1	0	0	2	1	1	1	0	2	4	1.1								
195	75.3	300	0	3	0	0	2	2	1	1	1	2	4	1.5								
196	76.0	85	0	4	0	0	2	1	1	1	3	2	4	1.7								
197	74.0	105	0	5	0	0	2	1	1	1	3	2	4	1.8								
198	70.2	225	0	4	0	0	2	3	1	1	2	2	4	1.8								
199	81.0	95	0	5	0	0	2	1	1	1	3	2	4	1.8								
200	76.6	90	0	5	1	0	2	1	1	1	6	2	4	2.2								
201	73.1	140	0	2	0	0	2	3	1	1	2	2	4	1.6								
202	71.5	210	0	2	0	0	2	3	1	1	2	2	4	1.6								



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	AESTHETICS		CULTURAL RESOURCES		RECREATION		REFUGES / WILDLIFE MANAGEMENT AREAS		ENDANGERED SPECIES		BIRD CONCENTRATIONS		SEALS & SEA LION CONCENTRATIONS		COMMERCIAL FISHING		SHIPPING & UTILITIES		MILITARY USES		ANTICIPATED DEGREE OF IMPACT		
TCB-203	68.3	102	0	5	0	0	0	0	2	3	1	4	2	10	2.7										
204	69.6	120	0	5	0	0	0	0	2	3	1	3	2	10	2.6										
205	65.7	255	0	4	0	0	0	0	2	3	1	2	2	10	2.4										
206	79.2	120	0	5	1	0	0	0	2	1	1	6	2	4	2.2										
207	76.0	135	0	5	0	0	0	0	2	2	1	6	2	10	2.8										
208	72.8	25	0	8	2	0	0	0	2	2	1	8	2	10	3.5										
209	68.3	95	0	7	1	0	0	0	2	2	1	7	2	10	3.2										
210	78.5	220	0	7	0	0	0	0	2	2	1	3	2	10	2.7										
211	75.3	97	0	9	0	0	0	0	2	2	1	3	2	10	2.9										



TRACT NO.	DISTANCE FROM SHORE (KILOMETERS)	APPROXIMATE DEPTH (METERS)	DEGREE OF IMPACT											
			AESTHETICS	CULTURAL RESOURCES	RECREATION	REFUGES / WILDLIFE MANAGEMENT AREAS	ENDANGERED SPECIES	BIRD CONCENTRATIONS	SEALS & SEA LION CONCENTRATIONS	COMMERCIAL FISHING	SHIPPING & UTILITIES	MILITARY USES	ANTICIPATED	
TCB-212	72.1	80	0	7	2	0	2	2	1	4	2	10	3.0	
213	69.6	80	0	7	0	0	2	2	1	3	2	10	2.7	
214	72.1	510	0	2	0	0	2	2	1	1	2	10	2.0	
215	68.6	250	0	3	0	0	2	1	1	1	2	10	2.0	
216	65.1	475	0	2	0	0	2	1	1	0	2	10	1.8	
217	68.9	498	0	2	0	0	2	1	1	0	2	10	1.8	



## 4. Delegation of Functions of Fish and Wildlife Conservation

### *Ex. Ord. 10654*

(See Ex. Ord. 10654 under Title IV *Executive Orders*)

## 5. Endangered Species of Fish and Wildlife

### *16 U.S.C. 1531-1543*

Sec.

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§ 1531. Congressional findings and declaration of purposes and policy.

(a) The Congress finds and declares that—

(1) various species of fish, wildlife, and plants in the United States have been rendered extinct as a consequence of economic growth and development untempered by adequate concern and conservation;

(2) other species of fish, wildlife, and plants have been so depleted in numbers that they are in



danger of or threatened with extinction;

(3) these species of fish, wildlife, and plants are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people;

(4) the United States has pledged itself as a sovereign state in the international community to conserve to the extent practicable the various species of fish or wildlife and plants facing extinction, pursuant to—

(A) migratory bird treaties with Canada and Mexico;

(B) the Migratory and Endangered Bird Treaty with Japan;

(C) the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere;

(D) the International Convention for the Northwest Atlantic Fisheries;

(E) the International Convention for the High Seas Fisheries of the North Pacific Ocean;

(F) the Convention on International Trade in Endangered Species of Wild Fauna and Flora; and

(G) other international agreements.

(5) encouraging the States and other interested parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs which meet national and international standards is a key to meeting the Nation's international commitments and to better safeguarding, for the benefit of all citizens, the Nation's heritage in fish and wildlife.

(b) The purposes of this chapter are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section.

(c) It is further declared to be the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this chapter. (Pub. L. 93-205, § 2, Dec. 28, 1973, 87 Stat. 884.)

#### § 1532. Definitions.

For the purpose of this chapter—

(1) The term "commercial activity" means all activities of industry and trade, including, but not limited to, the buying or selling of commodities and activities conducted for the purpose of facilitating such buying and selling: *Provided, however,* That it does not include exhibition of commodities by museums or similar cultural or historical organizations.

(2) The terms "conserve", "conserving", and "conservation" mean to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census,

law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

(3) The term "Convention" means the Convention on International Trade in Endangered Species of Wild Fauna and Flora, signed on March 3, 1973, and the appendices thereto.

(4) The term "endangered species" means any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary to constitute a pest whose protection under the provisions of this chapter would present an overwhelming and overriding risk to man.

(5) The term "fish or wildlife" means any member of the animal kingdom, including without limitation any mammal, fish, bird (including any migratory, nonmigratory, or endangered bird for which protection is also afforded by treaty or other international agreement), amphibian, reptile, mollusk, crustacean, arthropod or other invertebrate, and includes any part, product, egg, or offspring thereof, or the dead body or parts thereof.

(6) The term "foreign commerce" includes, among other things, any transaction—

(A) between persons within one foreign country;

(B) between persons in two or more foreign countries;

(C) between a person within the United States and a person in a foreign country; or

(D) between persons within the United States, where the fish and wildlife in question are moving in any country or countries outside the United States.

(7) The term "import" means to land on, bring into, or introduce into, or attempt to land on, bring into, or introduce into, any place subject to the jurisdiction of the United States, whether or not such landing, bringing, or introduction constitutes an importation within the meaning of the customs laws of the United States.

(8) The term "person" means an individual, corporation, partnership, trust, association, or any other private entity, or any officer, employee, agent, department, or instrumentality of the Federal Government, of any State or political subdivision thereof, or of any foreign government.

(9) The term "plant" means any member of the plant kingdom, including seeds, roots and other parts thereof.

(10) The term "Secretary" means, except as otherwise herein provided, the Secretary of the Interior or the Secretary of Commerce as program responsibilities are vested pursuant to the provisions of Reorganization Plan Numbered 4 of 1970; except that with respect to the enforcement of the provisions of this chapter and the Convention which pertain to the importation or exportation of terrestrial plants, the term means the Secretary of Agriculture.

(11) The term "species" includes any subspecies of fish or wildlife or plants and any other group of fish or wildlife of the same species or smaller



taxa in common spatial arrangement that interbreed with mature.

(12) The term "State" means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, the Virgin Islands, Guam, and the Trust Territory of the Pacific Islands.

(13) The term "State agency" means the State agency, department, board, commission, or other governmental entity which is responsible for the management and conservation of fish or wildlife resources within a State.

(14) The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

(15) The term "threatened species" means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

(16) The term "United States", when used in a geographical context, includes all States.

(Pub. L. 93-205, § 3, Dec. 28, 1973, 87 Stat. 885; as amended Pub. L. 94-359, § 5, July 12, 1976, 90 Stat. 913.)

#### AMENDMENTS

1976—Paragraph (1), Pub. L. 94-359 added the proviso to paragraph (1).

§ 1533. Determination of endangered species and threatened species.

##### (a) Generally.

(1) The Secretary shall by regulation determine whether any species is an endangered species or a threatened species because of any of the following factors:

(1) the present or threatened destruction, modification, or curtailment of its habitat or range;

(2) overutilization for commercial, sporting, scientific, or educational purposes;

(3) disease or predation;

(4) the inadequacy of existing regulatory mechanisms; or

(5) other natural or manmade factors affecting its continued existence.

(2) With respect to any species over which program responsibilities have been vested in the Secretary of Commerce pursuant to Reorganization Plan Numbered 4 of 1970—

(A) in any case in which the Secretary of Commerce determines that such species should—

(i) be listed as an endangered species or a threatened species, or

(ii) be changed in status from a threatened species to an endangered species,

he shall so inform the Secretary of the Interior; who shall list such species in accordance with this section;

(B) in any case in which the Secretary of Commerce determines that such species should—

(i) be removed from any list published pursuant to subsection (c) of this section, or

(ii) be changed in status from an endangered species to a threatened species,

he shall recommend such action to the Secretary

of the Interior, and the Secretary of the Interior, if he concurs in the recommendation, shall implement such action; and

(C) the Secretary of the Interior may not list or remove from any list any such species, and may not change the status of any such species which are listed, without a prior favorable determination made pursuant to this section by the Secretary of Commerce.

##### (b) Basis for determinations.

(1) The Secretary shall make determinations required by subsection (a) of this section on the basis of the best scientific and commercial data available to him and after consultation, as appropriate, with the affected States, interested persons and organizations, other interested Federal agencies, and, in cooperation with the Secretary of State, with the country or countries in which the species concerned is normally found or whose citizens harvest such species on the high seas; except that in any case in which such determinations involve resident species of fish or wildlife, the Secretary of the Interior may not add such species to, or remove such species from, any list published pursuant to subsection (c) of this section, unless the Secretary has first—

(A) published notice in the Federal Register and notified the Governor of each State within which such species is then known to occur that such action is contemplated;

(B) allowed each such State 90 days after notification to submit its comments and recommendations, except to the extent that such period may be shortened by agreement between the Secretary and the Governor or Governors concerned; and

(C) published in the Federal Register a summary of all comments and recommendations received by him which relate to such proposed action.

(2) In determining whether or not any species is an endangered species or a threatened species, the Secretary shall take into consideration those efforts, if any, being made by any nation or any political subdivision of any nation to protect such species, whether by predator control, protection of habitat and food supply, or other conservation practices, within any area under the jurisdiction of any such nation or political subdivision, or on the high seas.

(3) Species which have been designated as requiring protection from unrestricted commerce by any foreign country, or pursuant to any international agreement, shall receive full consideration by the Secretary to determine whether each is an endangered species or a threatened species.

##### (c) Lists.

(1) The Secretary of the Interior shall publish in the Federal Register, and from time to time he may by regulation revise, a list of all species determined by him or the Secretary of Commerce to be endangered species and a list of all species determined by him or the Secretary of Commerce to be threatened species. Each list shall refer to the species contained therein by scientific and common name or names, if any, and shall specify with respect to each such species over what portion of its range it is endangered or threatened.



(2) The Secretary shall, upon the petition of an interested person under section 553(e) of Title 5, conduct a review of any listed or unlisted species proposed to be removed from or added to either of the lists published pursuant to paragraph (1) of this subsection, but only if he makes and publishes a finding that such person has presented substantial evidence which in his judgment warrants such a review.

(3) Any list in effect on December 27, 1973, of species of fish or wildlife determined by the Secretary of the Interior, pursuant to the Endangered Species Conservation Act of 1969, to be threatened with extinction shall be republished to conform to the classification for endangered species or threatened species, as the case may be, provided for in this chapter, but until such republication, any such species so listed shall be deemed an endangered species within the meaning of this chapter. The republication of any species pursuant to this paragraph shall not require public hearing or comment under section 553 of Title 5.

(d) Protective regulations.

Whenever any species is listed as a threatened species pursuant to subsection (c) of this section, the Secretary shall issue such regulations as he deems necessary and advisable to provide for the conservation of such species. The Secretary may by regulation prohibit with respect to any threatened species any act prohibited under section 1538(a)(1) of this title, in the case of fish or wildlife, or section 1538(a)(2) of this title, in the case of plants, with respect to endangered species; except that with respect to the taking of resident species of fish or wildlife, such regulations shall apply in any State which has entered into a cooperative agreement pursuant to section 1535(a) of this title only to the extent that such regulations have also been adopted by such State.

(e) Similarity of appearance cases.

The Secretary may, by regulation, and to the extent he deems advisable, treat any species as an endangered species or threatened species even though it is not listed pursuant to this section if he finds that—

(A) such species so closely resembles in appearance, at the point in question, a species which has been listed pursuant to such section that enforcement personnel would have substantial difficulty in attempting to differentiate between the listed and unlisted species;

(B) the effect of this substantial difficulty is an additional threat to an endangered or threatened species; and

(C) such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of this chapter.

(f) Regulations.

(1) Except as provided in paragraphs (2) and (3) of this subsection and subsection (b) of this section, the provisions of section 553 of Title 5 (relating to rulemaking procedures), shall apply to any regulation promulgated to carry out the purposes of this chapter.

(2) (A) In the case of any regulation proposed by the Secretary to carry out the purposes of this chapter—

(i) the Secretary shall publish general notice of the proposed regulation (including the complete text of the regulation) in the Federal Register not less than 60 days before the effective date of the regulation; and

(ii) If any person who feels that he may be adversely affected by the proposed regulation files (within 45 days after the date of publication of general notice) objections thereto and requests a public hearing thereon, the Secretary may grant such request, but shall, if he denies such request, publish his reasons therefor in the Federal Register.

(B) Neither subparagraph (A) of this paragraph nor section 553 of Title 5 shall apply in the case of any of the following regulations and any such regulation shall, at the discretion of the Secretary, take effect immediately upon publication of the regulation in the Federal Register:

(i) Any regulation appropriate to carry out the purposes of this chapter which was originally promulgated to carry out the Endangered Species Conservation Act of 1969.

(ii) Any regulation (including any regulation implementing section 1535(g)(2)(B)(ii) of this title) issued by the Secretary in regard to any emergency posing a significant risk to the well-being of any species of fish or wildlife, but only if (I) at the time of publication of the regulation in the Federal Register the Secretary publishes therein detailed reasons why such regulation is necessary, and (II) in the case such regulation applies to resident species of fish and wildlife, the requirements of subsection (b)(1)(A) of this section have been complied with. Any regulation promulgated under the authority of this clause (ii) shall cease to have force and effect at the close of the 120-day period following the date of publication unless, during such 120-day period, the rulemaking procedures which would apply to such regulation without regard to this subparagraph are complied with.

(3) The publication in the Federal Register of any proposed or final regulation which is necessary or appropriate to carry out the purposes of this chapter shall include a statement by the Secretary of the facts on which such regulation is based and the relationship of such facts to such regulation. (Pub. L. 93-205, § 4, Dec. 28, 1973, 87 Stat. 886; as amended Pub. L. 94-359, § 1, July 12, 1976, 90 Stat. 911.)

AMENDMENTS

1976—Subsec. (f)(2)(B)(ii), Pub. L. 94-359 substituted "subsection (b)(1)(A)" for "subsection (b)(A), (B), and (C)".

§ 1534. Land acquisition.

(a) The Secretary of the Interior shall establish and implement a program to conserve (A) fish or wildlife which are listed as endangered species or threatened species pursuant to section 1533 of this title; or (B) plants which are concluded in Appen-



dices to the Convention. To carry out such program, he—

(1) shall utilize the land acquisition and other authority under the Fish and Wildlife Act of 1958, as amended, the Fish and Wildlife Coordination Act, as amended, and the Migratory Bird Conservation Act, as appropriate; and

(2) is authorized to acquire by purchase, donation, or otherwise, lands, waters, or interest therein, and such authority shall be in addition to any other land acquisition authority vested in him.

(b) Funds made available pursuant to the Land and Water Conservation Fund Act of 1965, as amended, may be used for the purpose of acquiring lands, waters, or interests therein under subsection (a) of this section. (Pub. L. 93-205, § 5, Dec. 28, 1973, 87 Stat. 889.)

#### § 1535. Cooperation with the States.

##### (a) Generally.

In carrying out the program authorized by this chapter, the Secretary shall cooperate to the maximum extent practicable with the States. Such cooperation shall include consultation with the States concerned before acquiring any land or water, or interest therein, for the purpose of conserving any endangered species or threatened species.

##### (b) Management agreements.

The Secretary may enter into agreements with any State for the administration and management of any area established for the conservation of endangered species or threatened species. Any revenues derived from the administration of such areas under these agreements shall be subject to the provisions of section 715s of this title.

##### (c) Cooperative agreements.

In furtherance of the purposes of this chapter, the Secretary is authorized to enter into a cooperative agreement in accordance with this section with any State which establishes and maintains an adequate and active program for the conservation of endangered species and threatened species. Within one hundred and twenty days after the Secretary receives a certified copy of such a proposed State program, he shall make a determination whether such program is in accordance with this chapter. Unless he determines, pursuant to this subsection, that the State program is not in accordance with this chapter, he shall enter into a cooperative agreement with the State for the purpose of assisting in implementation of the State program. In order for a State program to be deemed an adequate and active program for the conservation of endangered species and threatened species, the Secretary must find, and annually thereafter reconfirm such finding, that under the State program—

(1) authority resides in the States agency to conserve resident species of fish or wildlife determined by the State agency or the Secretary to be endangered or threatened;

(2) the State agency has established acceptable conservation programs, consistent with the purposes and policies of this chapter, for all resident species of fish or wildlife in the State which are deemed by the Secretary to be endangered or threatened, and has furnished a copy of such

plan and program together with all pertinent details, information, and data requested to the Secretary;

(3) the State agency is authorized to conduct investigations to determine the status and requirements for survival of resident species of fish and wildlife;

(4) the State agency is authorized to establish programs, including the acquisition of land or aquatic habitat or interests therein, for the conservation of resident endangered species or threatened species; and

(5) provision is made for public participation in designating resident species of fish or wildlife as endangered or threatened.

##### (d) Allocation of funds.

(1) The Secretary is authorized to provide financial assistance to any State, through its respective State agency, which has entered into a cooperative agreement pursuant to subsection (c) of this section to assist in development of programs for the conservation of endangered and threatened species. The Secretary shall make an allocation of appropriated funds to such States based on consideration of—

(A) the international commitments of the United States to protect endangered species or threatened species;

(B) the readiness of a State to proceed with a conservation program consistent with the objectives and purposes of this chapter;

(C) the number of endangered species and threatened species within a State;

(D) the potential for restoring endangered species and threatened species within a State; and

(E) the relative urgency to initiate a program to restore and protect an endangered species or threatened species in terms of survival of the species.

So much of any appropriated funds allocated for obligation to any State for any fiscal year as remains unobligated at the close thereof is authorized to be made available to that State until the close of the succeeding fiscal year. Any amount allocated to any State which is unobligated at the end of the period during which it is available for expenditure is authorized to be made available for expenditure by the Secretary in conducting programs under this section.

(2) Such cooperative agreements shall provide for (A) the actions to be taken by the Secretary and the States; (B) the benefits that are expected to be derived in connection with the conservation of endangered or threatened species; (C) the estimated cost of these actions; and (D) the share of such costs to be borne by the Federal Government and by the States; except that—

(i) the Federal share of such program costs shall not exceed 66⅔ per centum of the estimated program cost stated in the agreement; and

(ii) the Federal share may be increased to 75 per centum whenever two or more States having a common interest in one or more endangered or threatened species, the conservation of which may be enhanced by cooperation of such States, enter jointly into an agreement with the Secretary.



The Secretary may, in his discretion, and under such rules and regulations as he may prescribe, advance funds to the State for financing the United States pro rata share agreed upon in the cooperative agreement. For the purposes of this section, the non-Federal share may, in the discretion of the Secretary, be in the form of money or real property, the value of which will be determined by the Secretary, whose decision shall be final.

(e) Review of State programs.

Any action taken by the Secretary under this section shall be subject to his periodic review at no greater than annual intervals.

(f) Conflicts between Federal and State laws.

Any State law or regulation which applies with respect to the importation or exportation of, or interstate or foreign commerce in, endangered species or threatened species is void to the extent that it may effectively (1) permit what is prohibited by this chapter or by any regulation which implements this chapter, or (2) prohibit what is authorized pursuant to an exemption or permit provided for in this chapter or in any regulation which implements this chapter. This chapter shall not otherwise be construed to void any State law or regulation which is intended to conserve migratory, resident, or introduced fish or wildlife, or to permit or prohibit sale of such fish or wildlife. Any State law or regulation respecting the taking of an endangered species or threatened species may be more restrictive than the exemptions or permits provided for in this chapter or in any regulation which implements this chapter but not less restrictive than the prohibitions so defined.

(g) Transition.

(1) For purposes of this subsection, the term "establishment period" means, with respect to any State, the period beginning on December 28, 1973, and ending on whichever of the following dates first occurs: (A) the date of the close of the 120-day period following the adjournment of the first regular session of the legislature of such State which commences after December 28, 1973, or (B) the date of the close of the 15-month period following December 28, 1973.

(2) The prohibitions set forth in or authorized pursuant to sections 1533(d) and 1538(a) (1) (B) of this title shall not apply with respect to the taking of any resident endangered species or threatened species (other than species listed in Appendix I to the Convention or otherwise specifically covered by any other treaty or Federal law) within any State—

(A) which is then a party to a cooperative agreement with the Secretary pursuant to subsection (c) of this section (except to the extent that the taking of any such species is contrary to the law of such State); or

(B) except for any time within the establishment period when—

(i) the Secretary applies such prohibition to such species at the request of the State, or

(ii) the Secretary applies such prohibition after he finds, and publishes his finding, that an emergency exists posing a significant risk to the well-being of such species and that the prohibition must be applied to protect such species.

The Secretary's finding and publication may be made without regard to the public hearing or comment provisions of section 553 of Title 5 or any other provision of this chapter; but such prohibition shall expire 90 days after the date of its imposition unless the Secretary further extends such prohibition by publishing notice and a statement of justification of such extension.

(h) Regulations.

The Secretary is authorized to promulgate such regulations as may be appropriate to carry out the provisions of this section relating to financial assistance to States.

(i) Authorization of appropriations.

For the purposes of this section, there is authorized to be appropriated through the fiscal year ending June 30, 1977, not to exceed \$10,000,000. (Pub. L. 93-205, § 6, Dec. 28, 1973, 87 Stat. 889.)

§ 1536. Interagency cooperation.

The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this chapter. All other Federal departments and agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 1533 of this title and by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species and threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical. (Pub. L. 93-205, § 7, Dec. 28, 1973, 87 Stat. 892.)

§ 1537. International cooperation.

(a) Financial assistance.

As a demonstration of the commitment of the United States to the worldwide protection of endangered species and threatened species, the President may, subject to the provisions of section 724 of Title 31, use foreign currencies accruing to the United States Government under the Agricultural Trade Development and Assistance Act of 1954 or any other law to provide to any foreign country (with its consent) assistance in the development and management of programs in that country which the Secretary determines to be necessary or useful for the conservation of any endangered species or threatened species listed by the Secretary pursuant to section 1533 of this title. The President shall provide assistance (which includes, but is not limited to, the acquisition, by lease or otherwise, of lands, waters, or interests therein) to foreign countries under this section under such terms and conditions as he deems appropriate. Whenever foreign currencies are available for the provision of assistance under this section, such currencies shall be used in preference to funds appropriated under the authority of section 1542 of this title.



**(b) Encouragement of foreign programs.**

In order to carry out further the provisions of this chapter, the Secretary, through the Secretary of State, shall encourage—

(1) foreign countries to provide for the conservation of fish or wildlife including endangered species and threatened species listed pursuant to section 1533 of this title;

(2) the entering into of bilateral or multilateral agreements with foreign countries to provide for such conservation; and

(3) foreign persons who directly or indirectly take fish or wildlife in foreign countries or on the high seas for importation into the United States for commercial or other purposes to develop and carry out with such assistance as he may provide, conservation practices designed to enhance such fish or wildlife and their habitat.

**(c) Personnel.**

After consultation with the Secretary of State, the Secretary may—

(1) assign or otherwise make available any officer or employee of his department for the purpose of cooperating with foreign countries and international organizations in developing personnel resources and programs which promote the conservation of fish or wildlife; and

(2) conduct or provide financial assistance for the educational training of foreign personnel, in this country or abroad, in fish, wildlife, or plant management, research and law enforcement and to render professional assistance abroad in such matters.

**(d) Investigations.**

After consultation with the Secretary of State and the Secretary of the Treasury, as appropriate, the Secretary may conduct or cause to be conducted such law enforcement investigations and research abroad as he deems necessary to carry out the purposes of this chapter.

**(e) Convention implementation.**

The President is authorized and directed to designate agencies to act as the Management Authority or Authorities and the Scientific Authority or Authorities pursuant to the Convention. The agencies so designated shall thereafter be authorized to do all things assigned to them under the Convention, including the issuance of permits and certificates. The agency designated by the President to communicate with other parties to the Convention and with the Secretariat shall also be empowered, where appropriate, in consultation with the State Department, to act on behalf of and represent the United States in all regards as required by the Convention. The President shall also designate those agencies which shall act on behalf of and represent the United States in all regards as required by the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere. (Pub. L. 93-205, § 8, Dec. 28, 1973, 87 Stat. 892.)

**§ 1538. Prohibited acts.**

**(a) Generally.**

(1) Except as provided in sections 1535(g)(2) and 1539 of this title, with respect to any endangered

species of fish or wildlife listed pursuant to section 1533 of this title it is unlawful for any person subject to the jurisdiction of the United States to—

(A) import any such species into, or export any such species from the United States;

(B) take any such species within the United States or the territorial sea of the United States;

(C) take any such species upon the high seas;

(D) possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such species taken in violation of subparagraphs (B) and (C);

(E) deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of commercial activity, any such species;

(F) sell or offer for sale in interstate or foreign commerce any such species; or

(G) violate any regulation pertaining to such species or to any threatened species of fish or wildlife listed pursuant to section 1533 of this title and promulgated by the Secretary pursuant to authority provided by this chapter.

(2) Except as provided in sections 1535(g)(2) and 1539 of this title, with respect to any endangered species of plants listed pursuant to section 1533 of this title, it is unlawful for any person subject to the jurisdiction of the United States to—

(A) import any such species into, or export any such species from, the United States;

(B) deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity, any such species;

(C) sell or offer for sale in interstate or foreign commerce any such species; or

(D) violate any regulation pertaining to such species or to any threatened species of plants listed pursuant to section 1533 of this title and promulgated by the Secretary pursuant to authority provided by this chapter.

**(b) Species held in captivity or controlled environment.**

The provisions of this section shall not apply to any fish or wildlife held in captivity or in a controlled environment on December 28, 1973, if the purposes of such holding are not contrary to the purposes of this chapter; except that this subsection shall not apply in the case of any fish or wildlife held in the course of a commercial activity. With respect to any act prohibited by this section which occurs after a period of 180 days from December 28, 1973, there shall be a rebuttable presumption that the fish or wildlife involved in such act was not held in captivity or in a controlled environment on December 28, 1973.

**(c) Violation of Convention.**

(1) It is unlawful for any person subject to the jurisdiction of the United States to engage in any trade in any specimens contrary to the provisions of the Convention, or to possess any specimens traded contrary to the provisions of the Convention, including the definitions of terms in article I thereof.

(2) Any importation into the United States of fish or wildlife shall, if—

(A) such fish or wildlife is not an endangered species listed pursuant to section 1533 of this title



but is listed in Appendix II to the Convention,

(B) the taking and exportation of such fish or wildlife is not contrary to the provisions of the Convention and all other applicable requirements of the Convention have been satisfied,

(C) the applicable requirements of subsections (d), (e), and (f) of this section have been satisfied, and

(D) such importation is not made in the course of a commercial activity,

be presumed to be an importation not in violation of any provision of this chapter or any regulation issued pursuant to this chapter.

**(d) Imports and exports.**

(1) It is unlawful for any person to engage in business as an importer or exporter of fish or wildlife (other than shellfish and fishery products which (A) are not listed pursuant to section 1533 of this title as endangered species or threatened species, and (B) are imported for purposes of human or animal consumption or taken in waters under the jurisdiction of the United States or on the high seas for recreational purposes) or plants without first having obtained permission from the Secretary.

(2) Any person required to obtain permission under paragraph (1) of this subsection shall—

(A) keep such records as will fully and correctly disclose each importation or exportation of fish, wildlife, or plants made by him and the subsequent disposition made by him with respect to such fish, wildlife, or plants;

(B) at all reasonable times upon notice by a duly authorized representative of the Secretary, afford such representative access to his places of business, an opportunity to examine his inventory of imported fish, wildlife, or plants and the records required to be kept under subparagraph (A) of this paragraph, and to copy such records; and

(C) file such reports as the Secretary may require.

(3) The Secretary shall prescribe such regulations as are necessary and appropriate to carry out the purposes of this subsection.

**(e) Reports.**

It is unlawful for any person importing or exporting fish or wildlife (other than shellfish and fishery products which (1) are not listed pursuant to section 1533 of this title as endangered or threatened species, and (2) are imported for purposes of human or animal consumption or taken in waters under the jurisdiction of the United States or on the high seas for recreational purposes) or plants to fail to file any declaration or report as the Secretary deems necessary to facilitate enforcement of this chapter or to meet the obligations of the Convention.

**(f) Designation of ports.**

(1) It is unlawful for any person subject to the jurisdiction of the United States to import into or export from the United States any fish or wildlife (other than shellfish and fishery products which (A) are not listed pursuant to section 1533 of this title as endangered species or threatened species, and (B) are imported for purposes of human or animal consumption or taken in waters under the jurisdiction

of the United States or on the high seas for recreational purposes) or plants, except at a port or ports designated by the Secretary of the Interior. For the purpose of facilitating enforcement of this chapter and reducing the costs thereof, the Secretary of the Interior, with approval of the Secretary of the Treasury and after notice and opportunity for public hearing, may, by regulation, designate ports and change such designations. The Secretary of the Interior, under such terms and conditions as he may prescribe, may permit the importation or exportation at nondesignated ports in the interest of the health or safety of the fish or wildlife or plants, or for other reasons, if, in his discretion, he deems it appropriate and consistent with the purpose of this subsection.

(2) Any port designated by the Secretary of the Interior under the authority of section 668cc-4 (d) of this title, shall, if such designation is in effect on December 27, 1973, be deemed to be a port designated by the Secretary under paragraph (1) of this subsection until such time as the Secretary otherwise provides.

**(g) Violations.**

It is unlawful for any person subject to the jurisdiction of the United States to attempt to commit, solicit another to commit, or cause to be committed, any offense defined in this section. (Pub. L. 93-205, § 9, Dec. 28, 1973, 87 Stat. 893.)

**§ 1539. Exceptions.**

**(a) Permits.**

The Secretary may permit, under such terms and conditions as he may prescribe, any act otherwise prohibited by section 1538 of this title for scientific purposes or to enhance the propagation or survival of the affected species.

**(b) Hardship exemptions.**

(1) If any person enters into a contract with respect to a species of fish or wildlife or plant before the date of the publication in the Federal Register of notice of consideration of that species as an endangered species and the subsequent listing of that species as an endangered species pursuant to section 1533 of this title will cause undue economic hardship to such person under the contract, the Secretary, in order to minimize such hardship, may exempt such person from the application of section 1538(a) of this title to the extent the Secretary deems appropriate if such person applies to him for such exemption and includes with such application such information as the Secretary may require to prove such hardship; except that (A) no such exemption shall be for a duration of more than one year from the date of publication in the Federal Register of notice of consideration of the species concerned, or shall apply to a quantity of fish or wildlife or plants in excess of that specified by the Secretary; (B) the one-year period for those species of fish or wildlife listed by the Secretary as endangered prior to December 28, 1973, shall expire in accordance with the terms of section 668cc-3 of this title; and (C) no such exemption may be granted for the importation or exportation of a specimen listed in Appendix I of the Convention which is to be used in a commercial activity.

(2) As used in this subsection, the term "undue



economic hardship" shall include, but not be limited to:

(A) substantial economic loss resulting from inability caused by this chapter to perform contracts with respect to species of fish and wildlife entered into prior to the date of publication in the Federal Register of a notice of consideration of such species as an endangered species;

(B) substantial economic loss to persons who, for the year prior to the notice of consideration of such species as an endangered species, derived a substantial portion of their income from the lawful taking of any listed species, which taking would be made unlawful under this chapter; or

(C) curtailment of subsistence taking made unlawful under this chapter by persons (i) not reasonably able to secure other sources of subsistence; and (ii) dependent to a substantial extent upon hunting and fishing for subsistence; and (iii) who must engage in such curtailed taking for subsistence purposes.

(3) The Secretary may make further requirements for a showing of undue economic hardship as he deems fit. Exceptions granted under this section may be limited by the Secretary in his discretion as to time, area, or other factor of applicability.

(c) Notice and review.

The Secretary shall publish notice in the Federal Register of each application for an exemption or permit which is made under this section. Each notice shall invite the submission from interested parties, within thirty days after the date of the notice, written data, views, or arguments with respect to the application. Information received by the Secretary as a part of any application shall be available to the public as a matter of public record at every stage of the proceeding: except that such thirty-day period may be waived by the Secretary in an emergency situation where the health or life of an endangered animal is threatened and no reasonable alternative is available to the applicant, but notice of any such waiver shall be published by the Secretary in the Federal Register within ten days following the issuance of the exemption or permit.

(d) Permit and exemption policy.

The Secretary may grant exceptions under subsections (a) and (b) of this section only if he finds and publishes his finding in the Federal Register that (1) such exceptions were applied for in good faith, (2) if granted and exercised will not operate to the disadvantage of such endangered species, and (3) will be consistent with the purposes and policy set forth in section 1531 of this title.

(e) Alaska natives.

(1) Except as provided in paragraph (4) of this subsection the provisions of this chapter shall not apply with respect to the taking of any endangered species or threatened species, or the importation of any such species taken pursuant to this section, by—

(A) any Indian, Aleut, or Eskimo who is an Alaskan Native who resides in Alaska; or

(B) any non-native permanent resident of an Alaskan native village;

if such taking is primarily for subsistence purposes.

Non-edible byproducts of species taken pursuant to this section may be sold in interstate commerce when made into authentic native articles of handicrafts and clothing; except that the provisions of this subsection shall not apply to any non-native resident of an Alaskan native village found by the Secretary to be not primarily dependent upon the taking of fish and wildlife for consumption or for the creation and sale of authentic native articles of handicrafts and clothing.

(2) Any taking under this subsection may not be accomplished in a wasteful manner.

(3) As used in this subsection—

(i) The term "subsistence" includes selling any edible portion of fish or wildlife in native villages and towns in Alaska for native consumption within native villages or towns; and

(ii) The term "authentic native articles of handicrafts and clothing" means items composed wholly or in some significant respect of natural materials, and which are produced, decorated, or fashioned in the exercise of traditional native handicrafts without the use of pantographs, multiple carvers, or other mass copying devices. Traditional native handicrafts include, but are not limited to, weaving, carving, stitching, sewing, lacing, beading, drawing, and painting.

(4) Notwithstanding the provisions of paragraph (1) of this subsection, whenever the Secretary determines that any species of fish or wildlife which is subject to taking under the provisions of this subsection is an endangered species or threatened species, and that such taking materially and negatively affects the threatened or endangered species, he may prescribe regulations upon the taking of such species by any such Indian, Aleut, Eskimo, or non-Native Alaskan resident of an Alaskan native village. Such regulations may be established with reference to species, geographical description of the area included, the season for taking, or any other factors related to the reason for establishing such regulations and consistent with the policy of this chapter. Such regulations shall be prescribed after a notice and hearings in the affected judicial districts of Alaska and as otherwise required by section 1373 of this title, and shall be removed as soon as the Secretary determines that the need for their impositions has disappeared.

(f) (1) As used in this subsection—

(A) The term "pre-Act endangered species part" means—

(i) any sperm whale oil, including derivatives thereof, which was lawfully held within the United States on December 28, 1973, in the course of a commercial activity; or

(ii) any finished scrimshaw product, if such product or the raw material for such product was lawfully held within the United States on December 28, 1973, in the course of a commercial activity.

(B) The term "scrimshaw product" means any art form which involves the etching or engraving of designs upon, or the carving of figures, patterns, or designs from, any bone or tooth of any marine mammal of the order Cetacea.



(2) The Secretary, pursuant to the provisions of this subsection, may exempt, if such exemption is not in violation of the Convention, any pre-Act endangered species part from one or more of the following prohibitions:

(A) The prohibition on exportation from the United States set forth in section 1538(a)(1)(A) of this title.

(B) Any prohibition set forth in section 1538(a)(1)(E) or (F) of this title.

(3) Any person seeking an exemption described in paragraph (2) of this subsection shall make application therefor to the Secretary in such form and manner as he shall prescribe, but no such application may be considered by the Secretary unless the application—

(A) is received by the Secretary before the close of the one-year period beginning on the date on which regulations promulgated by the Secretary to carry out this subsection first take effect;

(B) contains a complete and detailed inventory of all pre-Act endangered species parts for which the applicant seeks exemption;

(C) is accompanied by such documentation as the Secretary may require to prove that any endangered species part or product claimed by the applicant to be a pre-Act endangered species part is in fact such a part; and

(D) contains such other information as the Secretary deems necessary and appropriate to carry out the purposes of this subsection.

(4) If the Secretary approves any application for exemption made under this subsection, he shall issue to the applicant a certificate of exemption which shall specify—

(A) any prohibition in section 1538(a) of this title which is exempted;

(B) the pre-Act endangered species parts to which the exemption applies;

(C) the period of time during which the exemption is in effect, but no exemption made under this subsection shall have force and effect after the close of the three-year period beginning on the date of issuance of the certificate; and

(D) any term or condition prescribed pursuant to paragraph (5)(A) or (B), or both, which the Secretary deems necessary or appropriate.

(5) The Secretary shall prescribe such regulations as he deems necessary and appropriate to carry out the purposes of this subsection. Such regulations may set forth—

(A) terms and conditions which may be imposed on applicants for exemptions under this subsection (including, but not limited to, requirements that applicants register inventories, keep complete sales records, permit duly authorized agents of the Secretary to inspect such inventories and records, and periodically file appropriate reports with the Secretary); and

(B) terms and conditions which may be imposed on any subsequent purchaser of any pre-Act endangered species part covered by an ex-

emption granted under this subsection;

to insure that any such part so exempted is adequately accounted for and not disposed of contrary to the provisions of this Act. No regulation prescribed by the Secretary to carry out the purposes of this subsection shall be subject to section 1533(f)(2)(A)(i) of this title.

(6) (A) Any contract for the sale of pre-Act endangered species parts which is entered into by the Administrator of General Services prior to the effective date of this subsection and pursuant to the notice published in the Federal Register on January 9, 1973, shall not be rendered invalid by virtue of the fact that fulfillment of such contract may be prohibited under section 1538(a)(1)(F).

(B) In the event that this paragraph is held invalid, the validity of the remainder of the Act, including the remainder of this subsection, shall not be affected.

(7) Nothing in this subsection shall be construed to—

(A) exonerate any person from any act committed in violation of paragraphs (1)(A), (1)(E), or (1)(F) of section 1538(a) prior to the date of enactment of this subsection; or

(B) immunize any person from prosecution for any such act.

(g) In connection with any action alleging a violation of section 1533, any person claiming the benefit of any exemption or permit under this Act shall have the burden of proving that the exemption or permit is applicable, has been granted, and was valid and in force at the time of the alleged violation. (Pub. L. 93-205, § 10, Dec. 28, 1973, 87 Stat. 896; as amended Pub. L. 94-359, §§ 2, 3, July 12, 1976, 90 Stat. 911, 912.)

#### AMENDMENTS

1976—Subsec. (c) Pub. L. 94-359, § 3(2), added a semicolon and all that follows.

Subsec. (f) and (g), Pub. L. 94-359, § 2, added subsec. (f) and (g).

#### § 1540. Penalties and enforcement.

##### (a) Civil penalties.

(1) Any person who knowingly violates, or who knowingly commits an act in the course of a commercial activity which violates, any provision of this chapter, or any provision of any permit or certificate issued hereunder, or of any regulation issued in order to implement subsection (a)(1)(A), (B), (C), (D), (E), or (F), (a)(2)(A), (B), or (C), (c), (d) (other than regulation relating to record-keeping or filing of reports), (f) or (g) of section 1538 of this title, may be assessed a civil penalty by the Secretary of not more than \$10,000 for each violation. Any person who knowingly violates, or who knowingly commits an act in the course of a commercial activity which violates, any provision of any other regulation issued under this chapter may be assessed a civil penalty by the Secretary of not more than \$5,000 for each such violation. Any person who otherwise violates any provision of this chapter, or any regulation, permit, or certificate issued hereunder, may be assessed a civil penalty by the Secretary of not more than \$1,000 for each such violation.



No penalty may be assessed under this subsection unless such person is given notice and opportunity for a hearing with respect to such violation. Each violation shall be a separate offense. Any such civil penalty may be remitted or mitigated by the Secretary. Upon any failure to pay a penalty assessed under this subsection, the Secretary may request the Attorney General to institute a civil action in a district court of the United States for any district in which such person is found, resides, or transacts business to collect the penalty and such court shall have jurisdiction to hear and decide any such action. The court shall hear such action on the record made before the Secretary and shall sustain his action if it is supported by substantial evidence on the record considered as a whole.

(2) Hearings held during proceedings for the assessment of civil penalties authorized by paragraph (1) of this subsection shall be conducted in accordance with section 554 of Title 5. The Secretary may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and administer oaths. Witnesses summoned shall be paid the same fees and mileage that are paid to witnesses in the courts of the United States. In case of contumacy or refusal to obey a subpoena served upon any person pursuant to this paragraph, the district court of the United States for any district in which such person is found or resides or transacts business, upon application by the United States and after notice to such person, shall have jurisdiction to issue an order requiring such person to appear and give testimony before the Secretary or to appear and produce documents before the Secretary, or both, and any failure to obey such order of the court may be punished by such court as a contempt thereof.

**(b) Criminal violations.**

(1) Any person who willfully commits an act which violates any provision of this chapter, of any permit or certificate issued hereunder, or of any regulation issued in order to implement subsection (a) (1) (A), (B), (C), (D), (E), or (F); (a) (2) (A), (B), or (C), (c), (d) (other than a regulation relating to record-keeping, or filing of reports), (f), or (g) of section 1538 of this title shall, upon conviction, be fined not more than \$20,000 or imprisoned for not more than one year, or both. Any person who willfully commits an act which violates any provisions of any other regulation issued under this chapter shall, upon conviction, be fined not more than \$10,000 or imprisoned for not more than six months, or both.

(2) The head of any Federal agency which has issued a lease, license, permit, or other agreement authorizing the use of Federal lands, including grazing of domestic livestock, to any person who is convicted of a criminal violation of this chapter or any regulation, permit, or certificate issued hereunder may immediately modify, suspend, or revoke each lease, license, permit, or other agreement. The Secretary shall also suspend for a period of up to one year, or cancel, any Federal hunting or fishing permits or stamps issued to any person who is convicted of a criminal violation of any provision of this chapter or any regulation, permit, or certificate issued hereunder. The United States shall not be liable for

the payments of any compensation, reimbursement, or damages in connection with the modification, suspension, or revocation of any leases, licenses, permits, stamps, or other agreements pursuant to this section.

**(c) District court jurisdiction.**

The several district courts of the United States, including the courts enumerated in section 460 of Title 28, shall have jurisdiction over any actions arising under this chapter. For the purpose of this chapter, American Samoa shall be included within the judicial district of the District Court of the United States for the District of Hawaii.

**(d) Rewards.**

Upon the recommendation of the Secretary, the Secretary of the Treasury is authorized to pay an amount equal to one-half of the civil penalty or fine paid, but not to exceed \$2,500, to any person who furnishes information which leads to a finding of civil violation or a conviction of a criminal violation of any provision of this chapter or any regulation or permit issued thereunder. Any officer or employee of the United States or of any State or local government who furnishes information or renders service in the performance of his official duties shall not be eligible for payment under this section.

**(e) Enforcement.**

(1) The provisions of this chapter and any regulations or permits issued pursuant thereto shall be enforced by the Secretary, the Secretary of the Treasury, or the Secretary of the Department in which the Coast Guard is operating, or all such Secretaries. Each such Secretary may utilize by agreement, with or without reimbursement, the personnel, services, and facilities of any other Federal agency or any State agency for purposes of enforcing this chapter.

(2) The judges of the district courts of the United States and the United States magistrates may, within their respective jurisdictions, upon proper oath or affirmation showing probable cause, issue such warrants or other process as may be required for enforcement of this chapter and any regulation issued thereunder.

(3) Any person authorized by the Secretary, the Secretary of the Treasury, or the Secretary of the Department in which the Coast Guard is operating, to enforce this chapter may detain for inspection and inspect any package, crate, or other container, including its contents, and all accompanying documents, upon importation or exportation. Such person may make arrests without a warrant for any violation of this Act if he has reasonable grounds to believe that the person to be arrested is committing the violation in his presence or view, and may execute and serve any arrest warrant, search warrant, or other warrant or civil or criminal process issued by any officer or court of competent jurisdiction for enforcement of this chapter. Such person so authorized may search and seize, with or without a warrant, as authorized by law. Any fish, wildlife, property, or item so seized shall be held by any person authorized by the Secretary, the Secretary of the Treasury, or the Secretary of the Depart-



ment in which the Coast Guard is operating pending disposition of civil or criminal proceedings, or the institution of an action in rem for forfeiture of such fish, wildlife, property, or item pursuant to paragraph (4) of this subsection; except that the Secretary may, in lieu of holding such fish, wildlife, property, or item, permit the owner or consignee to post a bond or other surety satisfactory to the Secretary, but upon forfeiture of any such property to the United States, or the abandonment or waiver of any claim to any such property, it shall be disposed of (other than by sale to the general public) by the Secretary in such a manner, consistent with the purposes of this Act, as the Secretary shall by regulation prescribe.

(4) (A) All fish or wildlife or plants taken, possessed, sold, purchased, offered for sale or purchase, transported, delivered, received, carried, shipped, exported, or imported contrary to the provisions of this chapter, any regulation made pursuant thereto, or any permit or certificate issued hereunder shall be subject to forfeiture to the United States.

(B) All guns, traps, nets, and other equipment, vessels, vehicles, aircraft, and other means of transportation used to aid the taking, possessing, selling, purchasing, offering for sale or purchase, transporting, delivering, receiving, carrying, shipping, exporting, or importing of any fish or wildlife or plants in violation of this chapter, any regulation made pursuant thereto, or any permit or certificate issued thereunder shall be subject to forfeiture to the United States upon conviction of a criminal violation pursuant to subsection (b) (1) of this section.

(5) All provisions of law relating to the seizure, forfeiture, and condemnation of a vessel for violation of the customs laws, the disposition of such vessel or the proceeds from the sale thereof, and the remission or mitigation of such forfeiture, shall apply to the seizures and forfeitures incurred, or alleged to have been incurred, under the provisions of this chapter, insofar as such provisions of law are applicable and not inconsistent with the provisions of this chapter; except that all powers, rights, and duties conferred or imposed by the customs laws upon any officer or employee of the Treasury Department shall, for the purposes of this chapter, be exercised or performed by the Secretary or by such persons as he may designate.

(f) Regulations.

The Secretary, the Secretary of the Treasury, and the Secretary of the Department in which the Coast Guard is operating, are authorized to promulgate such regulations as may be appropriate to enforce this chapter, and charge reasonable fees for expenses to the Government connected with permits or certificates authorized by this chapter including processing applications and reasonable inspections, and with the transfer, board, handling, or storage of fish or wildlife or plants and evidentiary items seized and forfeited under this chapter. All such fees collected pursuant to this subsection shall be deposited in the Treasury to the credit of the appropriation which is current and chargeable for the cost of furnishing the services. Appropriated funds may be expended pending reimbursement from parties in interest.

(g) Citizen suits.

(1) Except as provided in paragraph (2) of this subsection any person may commence a civil suit on his own behalf—

(A) to enjoin any person, including the United States and any other governmental instrumentality or agency (to the extent permitted by the eleventh amendment to the Constitution), who is alleged to be in violation of any provision of this chapter or regulation issued under the authority thereof; or

(B) to compel the Secretary to apply, pursuant to section 1535(g) (2) (B) (ii) of this title, the prohibitions set forth in or authorized pursuant to section 1533(d) or 1538(a) (1) (B) of this title with respect to the taking of any resident endangered species or threatened species within any State.

The district courts shall have jurisdiction, without regard to the amount in controversy or the citizenship of the parties, to enforce any such provision or regulation, as the case may be. In any civil suit commenced under subparagraph (B) the district court shall compel the Secretary to apply the prohibition sought if the court finds that the allegation that an emergency exists is supported by substantial evidence.

(2) (A) No action may be commenced under subparagraph (1) (A) of this section—

(i) prior to sixty days after written notice of the violation has been given to the Secretary, and to any alleged violator of any such provision or regulation;

(ii) If the Secretary has commenced action to impose a penalty pursuant to subsection (a) of this section; or

(iii) if the United States has commenced and is diligently prosecuting a criminal action in a court of the United States or a State to redress a violation of any such provision or regulation.

(B) No action may be commenced under subparagraph (1) (B) of this section—

(i) prior to sixty days after written notice has been given to the Secretary setting forth the reasons why an emergency is thought to exist with respect to an endangered species or a threatened species in the State concerned; or

(ii) if the Secretary has commenced and is diligently prosecuting action under section 1535(g) (2) (B) (ii) of this title to determine whether any such emergency exists.

(3) (A) Any suit under this subsection may be brought in the judicial district in which the violation occurs.

(B) In any such suit under this subsection in which the United States is not a party, the Attorney General, at the request of the Secretary, may intervene on behalf of the United States as a matter of right.

(4) The court, in issuing any final order in any suit brought pursuant to paragraph (1) of this subsection, may award costs of litigation (including reasonable attorney and expert witness fees) to any party, whenever the court determines such award is appropriate.

(5) The injunctive relief provided by this subsection shall not restrict any right which any person (or class of persons) may have under any statute or



common law to seek enforcement of any standard or limitation or to seek any other relief (including relief against the Secretary or a State agency)

(h) Coordination with other laws.

The Secretary of Agriculture and the Secretary shall provide for appropriate coordination of the administration of this chapter with the administration of the animal quarantine laws (sections 101 to 105, 111 to 135b, and 612 to 614 of Title 21) and section 1306 of Title 19. Nothing in this chapter or any amendment made by this Act shall be construed as superseding or limiting in any manner the functions of the Secretary of Agriculture under any other law relating to prohibited or restricted importations or possession of animals and other articles and no proceeding or determination under this chapter shall preclude any proceeding or be considered determinative of any issue of fact or law in any proceeding under any Act administered by the Secretary of Agriculture. Nothing in this chapter shall be construed as superseding or limiting in any manner the functions and responsibilities of the Secretary of the Treasury under the Tariff Act of 1930, including, without limitation, section 1527 of Title 19, relating to the importation of wildlife taken, killed, possessed, or exported to the United States in violation of the laws or regulations of a foreign country. (Pub. L. 93-205, § 11, Dec. 28, 1973, 87 Stat. 897; as amended Pub. L. 94-359, § 4, July 12, 1976, 90 Stat. 913.)

§ 1541. Endangered plants.

The Secretary of the Smithsonian Institution, in conjunction with other affected agencies, is authorized and directed to review (1) species of plants which are now or may become endangered or threatened and (2) methods of adequately conserving such species, and to report to Congress, within one year

after December 28, 1973, the results of such review including recommendations for new legislation or the amendment of existing legislation. (Pub. L. 93-205, § 12, Dec. 28, 1973, 87 Stat. 901.)

§ 1542. Authorization of appropriations.

Except as authorized in section 1535 of this title, there are authorized to be appropriated—

(1) not to exceed \$10,000,000 for the fiscal year ending June 30, 1976, not to exceed \$1,800,000 for the fiscal transitional period ending September 30, 1976, and not to exceed a total of \$25,000,000 for the fiscal year ending September 30, 1977 and the fiscal year ending September 30, 1978, to enable the Department of the Interior to carry out such functions and responsibilities as it may have been given under this chapter; and

(2) not to exceed \$2,000,000 for the fiscal year ending June 30, 1976, not to exceed \$500,000 for the fiscal transitional period ending September 30, 1976, and not to exceed a total of \$5,000,000 for the fiscal year ending September 30, 1977 and the fiscal year ending September 30, 1978, to enable the Department of Commerce to carry out such functions and responsibilities as it may have been given under this chapter.

(Pub. L. 93-205, § 15, Dec. 28, 1973, 87 Stat. 903; as amended Pub. L. 94-325, June 30, 1976, 90 Stat. 724.)

§ 1543. Construction with Marine Mammal Protection Act of 1972

Except as otherwise provided in this chapter, no provision of this chapter shall take precedence over any more restrictive conflicting provision of the Marine Mammal Protection Act of 1972. (Pub. L. 93-205, § 17, Dec. 28, 1973, 87 Stat. 903.)







DEPARTMENT OF THE INTERIOR  
OFFICE OF THE SECRETARY

WASHINGTON, D.C. 20240

DEPARTMENT OF TRANSPORTATION  
OFFICE OF THE SECRETARY

WASHINGTON, D.C. 20590

MEMORANDUM OF UNDERSTANDING BETWEEN THE DEPARTMENTS OF THE INTERIOR AND TRANSPORTATION CONCERNING RESPECTIVE RESPONSIBILITIES UNDER THE NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN.

In order to assure the most efficient use of resources under the National Oil and Hazardous Substances Pollution Contingency Plan, the Secretaries of the Departments of the Interior and Transportation agree that the following provisions shall be observed by the agencies of the two Departments in the exercise of their authority and the discharge of their responsibilities under the Contingency Plan.

1. The U.S. Geological Survey has the expertise and capability for coordination and direction in respect to measures to abate the source of pollution when the source is an oil, gas, or sulfur well.

2. The U.S. Coast Guard has the expertise and capability for coordination and direction in respect to measures to contain and remove pollutants.

3. With respect to spills originating from operations conducted under the Outer Continental Shelf Lands Act of 1953, the U.S. Coast Guard shall furnish or provide for the On Scene Coordinator (OSC) with authority and responsibilities as provided by the National Contingency Plan subject to the following qualifications:

a. The authorized representative of the U.S. Geological Survey on the scene shall have the exclusive authority with respect to coordination and direction of measures to abate the source of pollution.

b. The authorized representative of the U.S. Geological Survey on the scene shall make the determination, which shall be binding upon the On Scene Coordinator, that pollution control activities within a 500 meter radius of the source of pollution should be suspended to facilitate measures to abate the source of pollution.

c. The authorized representative of the U.S. Geological Survey on the scene shall make the determinations necessary under Section 250.43 of Title 30 of the Code of Federal Regulations, which shall be binding upon the On Scene Coordinator.

d. In regard to those matters arising under Section 1334 et seq. of Title 43 of the U.S. Code and the regulations and Outer Continental Shelf Orders issued thereunder, the On Scene Coordinator shall communicate with the lessee through the authorized representative of the U.S. Geological Survey on scene.

e. The On Scene Coordinator and the authorized representative of the U.S. Geological Survey on scene shall maintain close liaison in all matters.

4. With respect to spills originating from operations conducted under the Submerged Lands Act of 1953 or in internal waters of the United States, the U.S. Geological Survey, upon request of the U.S. Coast Guard, will furnish expertise, guidance, and such other assistance as may be appropriate in respect to measures to abate the source of pollution when the source is an oil, gas, or sulfur well.

5. This memorandum of understanding shall be reviewed annually and shall continue in force until it shall be amended or terminated by mutual agreement.

Done this Sixteenth day of August, 1971, at the City of Washington, D. C.

FOR THE DEPARTMENT OF THE INTERIOR  
UNDER SECRETARY OF INTERIOR

WILLIAM T. PECORA

FOR THE DEPARTMENT OF TRANSPORTATION  
UNDER SECRETARY OF TRANSPORTATION

JAMES M. BEGGS







# APPENDIX I

## Title 43—Public Lands: Interior CHAPTER II—BUREAU OF LAND MANAGEMENT

[Circular No. 2404]

### PART 6220—PROTECTION AND PRESERVATION OF NATURAL VALUES

#### Management of Viable Coral Communities Located on the Outer Continental Shelf

1. The table of contents of Part 6220 is amended by adding a new Subpart 6224 as follows:

#### Subpart 6224—Viable Coral Communities

Sec.	
6224.0-1	Purpose.
6224.0-3	Authority.
6224.0-5	Definitions.
6224.1	Permits.
6224.1-1	Requirements for a permit.
6224.1-2	Application for a permit.
6224.1-3	Action on an application for a permit.
6224.1-4	Operations pursuant to a permit.
6224.1-5	Suspensions of operations.
6224.1-6	Revocation of a permit.
6224.2	Bonding requirements.
6224.3	Fees.
6224.4	Exceptions.
6224.5	Penalties.

**AUTHORITY:** Sec. 5, Outer Continental Shelf Lands Act (67 Stat. 462; 43 U.S.C. 1334).

2. A new Subpart 6224 is added as follows:

#### Subpart 6224—Viable Coral Communities

##### § 6224.0-1 Purpose.

The purpose of this subpart is to provide regulations relating to the protection and management of the viable coral communities located on the Outer Continental Shelf.

##### § 6224.0-3 Authority.

Section 5 of the Outer Continental Shelf Lands Act (67 Stat. 462; 43 U.S.C. 1334), gives the Secretary authority to administer the provisions of that Act as they apply to the Outer Continental Shelf and to issue necessary rules and regulations to carry out that authority.

##### § 6224.0-5 Definitions.

As used in this subpart, the term:

(a) "Viable Coral Community" means living coral and all dead coral formations and associated reef organisms that are part of a coral reef or other ecological community containing living corals.

(b) "Outer Continental Shelf" is defined in 43 U.S.C. 1331(a).

(c) "Authorized Officer" means any employee of the Bureau designated to perform the duties described in this subpart.

(d) "Bureau" means the Bureau of Land Management.

(e) "Person" means any individual, partnership, corporation, association, or other legal entity.

(f) "Proper Office" means the OCS office having jurisdiction of the area where the viable coral community that is the subject of interest is located.

##### § 6224.1 Permits.

##### § 6224.1-1 Requirement for a permit.

No person shall engage in any operation which directly causes damage or injury to a viable coral community that is located on the Outer Continental Shelf without having obtained a permit for said operations.

##### § 6224.1-2 Application for a permit.

(a) Application for a permit shall be filed in the proper office of the Bureau.

(b) No specific form is required.

(c) Each application shall include:

(1) The name, legal mailing address and telephone number of each person intending to participate in the operations covered by the application.

(2) A description of the proposed area of the operations.

(3) A map or maps, such as a National Ocean Survey Map, with a scale of not less than 1:80,000 delineating the proposed area of operations.

(4) Information in detail describing the nature of the proposed operations and how the operation will be conducted.

(5) If coral specimens are to be taken, the purpose of such taking, the method of taking, the currents and their velocity in the area of taking, the depth of taking, the size, estimated dry weight, and type of coral to be taken, and the estimated fair market value of the coral to be taken.

(6) The approximate dates of commencement and termination of the operation.

(7) An affirmative statement that the operation will use methods that are designed to do minimum harm and disturbance to the viable coral community covered by a permit and those viable coral communities adjacent thereto. Also, an explanation of the procedures that will be taken to assure protection of said viable coral communities during said operation.

##### § 6224.1-3 Action on an application for a permit.

(a) Within 60 days of receipt of the application for a permit, the application will be reviewed and the applicant will be:

(1) Notified in writing that the application is approved and a permit issued or is disapproved and a permit denied and the reasons therefor; or

(2) Notified in writing of any changes in, or additions to, the application deemed necessary by the authorized officer to meet the purpose of the regulations of this subpart; or

(3) Notified in writing that the application is being reviewed, but that more

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Circular Distribution List



time, not to exceed an additional 60 days, is necessary to complete the review, setting forth the reasons why additional time is necessary.

(b) A permit shall be granted for a period not to exceed 12 months and shall terminate on the expiration date shown therein unless extended by the authorized officer. One extension of not to exceed 12 months may be granted by the authorized officer.

(c) The rejection of an application for a permit and denial of said permit shall be subject to a right of appeal in accordance with 43 CFR Part 4, Subpart E.

#### § 6224.1-4 Operations pursuant to a permit.

(a) Any and all operations carried out pursuant to a permit granted pursuant to the provisions of this subpart shall be conducted in accordance with the terms of the permit.

(b) At any time during operations conducted under a permit issued pursuant to this subpart, the authorized officer may require a change in the operations in order to minimize unforeseen disturbance or harm to a viable coral community. The reason for such change shall be furnished the permittee in writing. If the permittee does not make the changes required by the authorized officer, appropriate action, including the suspension of operations, will be initiated to assure compliance with these regulations and protection of the viable coral community.

(c) The decision of the authorized officer to require a change in the operations of a permittee is subject to appeal in accordance with 43 CFR Part 4, subpart E.

#### § 6224.1-5 Suspension of operations.

If the authorized officer determines that the operations conducted by a permittee on a viable coral community pursuant to a permit are not being conducted in accordance with the provisions of the permit or of this subpart, he may after notification to the permittee, order an immediate suspension in operations.

#### § 6224.1-6 Revocation of a permit.

A permit may be revoked if the permittee fails to comply with any of the provisions of the permit or of this subpart. No permit shall be revoked until the permittee has been notified in writing, in person, or at the address required by Section 6224.1-2 hereof. Said revocation shall be effective upon delivery. A revocation is subject to appeal in accordance with 43 CFR Part 4, subpart E.

#### § 6224.2 Bonding requirements.

(a) The applicant, prior to the issuance of a permit, shall furnish a bond in an amount to be determined by the

authorized officer conditioned upon compliance with the terms of the permit. The authorized officer may require additional security in the form of a supplemental bond or bonds or an increase in the coverage of an existing bond, if, after the commencement of operations, such additional coverage is deemed necessary.

(b) In lieu of a bond, the applicant may deposit and maintain in a Federal depository, as directed by the authorized officer, cash in amount equal to the required dollar amount of the bond or negotiable securities of the United States having market value at the time of deposit of not less than the required dollar amount of the bond.

(c) When operations have been completed, the permittee shall notify the authorized officer, and the authorized officer shall, if satisfied that the permittee has performed in compliance with the provisions of the permit and this subpart, release the bond.

(d) The authorized officer may waive the requirement for a bond on a permit issued to a State and its political subdivisions and bona fide non-profit research organizations.

#### § 6224.3 Fees.

(a) Each application shall be accompanied by a \$25.00 non-refundable filing fee.

(b) In the case of permits for commercial purposes, the authorized officer may set a fee based on the estimated fair market value of the coral taken from the viable coral community for commercial purposes, but in no event shall said fee be less than 5 percent of said estimated fair market value.

#### § 6224.4 Exceptions.

The regulations of this subpart shall not apply to emergency activities taken to save human lives or property jeopardized at sea.

#### § 6224.5 Penalties.

Any person who knowingly and willingly violates the regulations of this subpart shall be guilty of a misdemeanor and punishable by a fine of not more than \$2,000 or by imprisonment for not more than six months, or by both such fine and imprisonment. Each day of violation shall be deemed a separate offense.

Signed at Washington, D.C., on September 10, 1976.

CHRIS FARRAND,  
Deputy Assistant Secretary  
of the Interior.

[FR Doc. 76-27063 Filed 2-15-76; 3:45 am]



## OVERVIEW OF DRILLING FLUIDS USE AND DISPOSAL ON THE OCS

### I. History

The first drilling fluids were simply those muds created by the action of the rotary drill bit on the formation it happened to be penetrating. Drilling fluids were introduced to the dry hole (cable tool) method of drilling in 1913 because wells drilled by this technique did not produce large quantities of fluid and were therefore prone to blowouts due to insufficient hydrostatic head to balance formation pressures.

By 1921, drilling fluid properties were being controlled through the use of additives purchased specifically for that purpose. Iron oxide was first used as a weighting agent and was soon replaced by barium sulfate. For a short period during World War II barium sulfate was in short supply and was replaced by strontium sulfate. Since barium sulfate again became available, it has been used almost exclusively as the weighting agent in drilling fluids.

Subsequent development of techniques for the testing of fluid properties spurred the use of more complex fluids so that by 1947, when the first offshore well out of sight of land was drilled, drilling fluid engineering was an established field. Today, there are over one thousand tradename products available for drilling fluids formulation (World Oil, 1977).

### II. Drilling Fluids Functions, Components, and Drilling Practices

Drilling fluids are used today in the drilling of oil and gas wells to:

- a. Cool and lubricate the drilling bit and drill pipe,
- b. Transport drill cuttings to the surface,
- c. Be thixotropic, so that cuttings will remain suspended when circulation is interrupted,
- d. Have sufficient density to provide hydrostatic pressures higher than formation pressures,
- e. Coat the wellbore wall with a filter cake to prevent fluid loss to permeable formations,
- f. Have low viscosity while flowing,
- g. Not interfere with interpretation of geological and electrical information required for lithology and logging evaluations, and
- h. Minimize corrosion.

To accomplish these various tasks, the drilling fluid must be carefully matched to the subsurface formations and drilling conditions encountered. As noted above, there are hundreds of components available for fluids formulation; but the

basic fluid is a water-based clay suspension with ferrochrome or chrome lignosulfonate added to control viscosity and fluid loss and barium sulfate added to increase fluid density. Some special application drilling fluids are either oil based or invert emulsion types and will not be treated here since they are not disposed of into the marine ecosystem. Table I lists the more common components of drilling fluids by function and their primary application.

The following description of drilling fluids practice probably typifies wells drilled on the OCS although most productive horizons would be at shallower depths than the maximum indicated; and would therefore result in less fluid disposal.

The first 150  $\pm$  feet is drilled or jetted with sea water and the resulting sea water mud is returned directly to the sea floor without being pumped to the rig. While drilling to 1,000 feet, typically only seawater is used as a drilling fluid and it is discharged overboard. If the formation clays do not make a viscous enough mud, bentonite is added to the system. Approximately 7,000 barrels (1106 m<sup>3</sup>) of water is discharged as a result of this operation and it contains mostly formation muds generated by drilling. Before running the conductor pipe to 1,000 feet, approximately six tons of bentonite is added to the 1,000 barrel (159 m<sup>3</sup>) saltwater system. When the conductor pipe is cemented, this bentonite is discharged overboard.

While drilling the remainder of the hole, the drilling fluid is continuously cycled back through the mud system. Some fluid is discharged with the drill cuttings as they come off of the shale shaker; and periodically drilling fluid is discharged overboard as excess amounts are generated from the formation. The maximum discharge does not exceed 200 barrels (31.8 m<sup>3</sup>) a day while drilling to 5,000 feet and 50 barrels (7.95 m<sup>3</sup>) a day from 5,000 to 10,000 feet. During approximately 20 days of drilling to 10,000 feet, some 2,000 barrels (318 m<sup>3</sup>) of bentonite-lignosulfonate mud will be discharged overboard. It is possible for the drilling fluid system to be converted from a seawater gel mud to a lignosulfonate treated freshwater mud at around 6,000 feet. This decision is based on the relative economics of transporting freshwater from shore versus the higher maintenance costs of seawater mud. During the additional 70 days of operations while drilling from 10,000 to 18,000 feet, the discharge rate will not exceed 50 barrels a day; and approximately 4,000



Table I - Common Drilling Fluid Components

<u>Description</u>	<u>Primary Application</u>
Weighting Agents And Viscosifiers	
Barite	For increasing mud weight up to 20 lbs/gal.
Calcium Carbonate	For increasing weight of oil muds up to 10.8 lbs/gal.
Bentonite	Viscosity and filtration control in water base muds.
Sub-Bentonite	For use when larger particle size is desired for viscosity and filtration control.
Attapulgate	Viscosifier in salt water muds.
Beneficiated Bentonite	Quick viscosity in fresh water upper hole muds with minimum chemical treatment.
Asbestos Fibers	Viscosifier for fresh or salt water muds.
Bacterially Produced Large Organic Polymer	Viscosifier and fluid loss control additive for low solids muds.
Dispersants	
Sodium Tetraphosphate	Thinner for low pH fresh water muds.
Sodium Acid Phosphosphate	For treating cement contamination.
Quebracho Compound	Thinner for fresh water and lime muds.
Causticized Quebracho	1-2 ratio caustic-Quebracho for thinning low pH fresh water muds.
Hemlock Extract	Thinner for fresh water muds and in muds containing salt (10,000 to 15,000 ppm).
Modified Tannin	Thinner for fresh and salt water muds alkalized for pH control.
Mined Lignite	Dispersant, emulsifier and supplementary additive for fluid loss control.
Causticized Lignite	1-6 ratio caustic-lignite dispersant, emulsifier and supplementary fluid loss additive.
Calcium Lignosulfonate	Thinner for SCR and lime muds.
Modified Lignosulfonate	Dispersant and fluid loss control additive for water base muds.
Blended Lignosulfonate Compound	Dispersant, fluid loss agent and inhibitor for RD-111 mud systems.
Fluid Loss Reducers	
Pregelatinized Starch	Controls fluid loss in saturated salt water, lime and SCR muds.
Sodium Carboxymethyl Cellulose	For fluid loss control and barite suspension in water base muds.
Sodium Carboxymethyl Cellulose	For fluid loss control and viscosity building in low solids muds.



## Description

## Primary Application

## Fluid Loss Reducers      Continued

Sodium Carboxymethyl Cellulose	For fluid loss control in gyp, sea water and fresh water muds.
Polyanionic Cellulosic Polymer	For fluid loss control and viscosifier in salt muds.
Sodium Polyacrylate	For fluid loss control in calcium free low solids muds.
Sodium Polyacrylate	For fluid loss control in low solids muds.

## Lubricants, detergents, emulsifiers

Extreme Pressure Lubricants	Used in water base muds to impart extreme pressure lubricity.
Processed Hydrocarbons	Used in water base muds to lower down-hole fluid loss and minimize heaving shale.
Oil Dispersible Asphalts	Used in water base muds to aid in controlling heaving shale.
Oil Soluble Surfactants	Used for spotting around differentially stuck pipe.
Detergent	Used in water base muds to aid in dropping sand. Emulsifies oil, reduces torque and minimizes bit balling.
Non-Ionic Emulsifier	Emulsifier for surfactant muds.
Blend of Anionic Surfactants	Emulsifier for salt and fresh water muds.
An Organic Entity Neutralized with Amines	Non-Polluting Lubricant for water base muds.
Blend of Fatty Acids Sulfonates, Asphaltic Materials	Used for spotting around differentially stuck pipe where weights in excess 10 ppg are required.

## Defoamers, Flocculants, Bactericides

Aluminum Stearate	Defoamer for lignosulfonate muds.
Sodium Alkyl Aryl Sulfonate	Defoamer for saturated salt muds.
Flocculating Agent	Used to drop drilled solids where clear water is desirable for a drilling fluid.
Paraformaldehyde	Prevents starch from fermenting when used in muds of less than saturation or alkalinity less than 1 cc.
Sodium Pentachlorophenate	Bactericide used to prevent fermentation.

## Lost Circulation Materials

Fibrous Material	Filler as well as matting material.
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## Description

## Primary Application

## Lost Circulation Materials - Continued

Fibrous Mineral Wool	Often used in areas where acids are later employed to destroy the material.
Walnut Shells- Fine Medium  Coarse	Most often used to prevent lost circulation. Used in conjunction with fibers or flakes to regain lost circulation. Used where large crevices or fractures are encountered.
Ground Mica- Fine Coarse	Used for prevention of lost circulation. Forms a good mat at face of well bore.
Cellophane	Used to regain lost circulation.
Combination of granules, flakes and fibrous materials of various sizes in one sack.	Used where large crevices or fractures are encountered.
Blended high fluid loss soft plugging material	One sack mixture for preparing soft plugs for severe lost circulation.

## Specialty Products

Shale Control Reagent	Calcium chloride mud for inhibiting the swelling of bentonitic shales.
Bentonite Extender	Increases yield of bentonite to form very low solids drilling fluid.
Non-Ionic Surfactant	Primary surfactant for formulating surfactant muds. May be used in hot holes for viscosity stability.
Filming - Amine	Corrosion inhibitor.

## Commercial Chemicals

Sodium Chromate	Used in water base muds to prevent high temperature gelation and as a corrosion inhibitor.
Sodium Hydroxide	For pH control in water base muds.
Sodium Carbonate	For treating out calcium sulfate in low pH muds.
Sodium Bicarbonate	For treating out calcium sulfate or cement in high pH muds.
Barium Carbonate	For treating out calcium sulfate (pH should be above 10 for best results).
Calcium Sulfate	Source of calcium for formulating gyp muds.
Calcium Hydroxide	Source of calcium for formulating lime muds.



## Description

## Primary Application

## Commercial Chemicals - Continued

Sodium Chloride	For saturated salt muds and resistivity control
Potassium Hydroxide	For pH stability and inhibition.
Chrome Alum (chromic chloride)	For use in cross-linking XC Polymer systems.

## Oil Base and Invert Emulsion Muds

Invert Emulsion (Water in Diesel Oil)	Protects sensitive producing formulations.
Oil Base Mud	Basically same application as Ken-X.
Gelatinous Oil Base Fluid	For casing recovery, corrosion control and protection of fresh water sands.

## Emulsifiers for Invert Emulsions

Primary Emulsifier	Primary additives to form stable water-in-oil emulsion.
Viscosity and Gel Builder	Provides weight suspension.
Hi-Temperature Stabilizer	Improves emulsion under high temperature conditions.
Hi-Temperature Stabilizer	Improves emulsion, weight suspension and fluid loss under high temperature conditions.



barrels (636 m<sup>3</sup>) of lignosulfonate drilling fluid is discharged overboard. When the well is completed, the drilling fluid which remains in the surface system, approximately 800 barrels (127.2 m<sup>3</sup>) is discharged overboard (Otteman, 1976). The typical compositions of the drilling fluids mentioned above are presented in Table II.

From the above information, the calculated weights of the various components which are discharged for an 18,000 foot well are presented in Table III.

Bactericides are added to drilling fluids to prevent microbial degradation of organic additives and to suppress the formation of hydrogen sulfide by sulfate-reducing bacteria. The types of bactericides currently used in drilling and completion fluids are presented in Table IV. Pentachlorophenate is recommended by the manufacturer to be used in drilling fluid systems at a concentration range of from .25 to .50 pounds per barrel.

### III. Environmental Effects

#### A. Acute Toxicity

McAuliffe and Palmer (1976), have summarized some of the published toxicity data on drilling fluid components and this information is presented in Table V. Most of these components are relatively non-toxic. Since bactericides are especially toxic, they deserve special consideration here. A summary of the published toxicity data for the types of bactericides used in drilling fluids is presented in Table VI. Of significant concern is the use of pentachlorophenate as a bactericide. This chlorinated hydrocarbon has been shown to have severe environmental effects, and as noted above, the recommended concentrations for use combined with current drilling fluid disposal practice could result in the introduction of large quantities of this chlorinated hydrocarbon into the marine ecosystem.

Since synergistic effects between drilling fluid components could increase or decrease toxicity, it is important to consider the toxicity of drilling fluids as they enter the marine ecosystem. The Offshore Operators Committee (1976) summarized some of the toxicity data on whole fluids as seen in Table VII, the 96 hour TL<sub>50</sub> concentrations range from 8,300 to 120,000 parts per million. More recently (EG & G, 1976) the toxicity of whole drilling fluids was tested with sensitive marine organisms. The results of these tests are

presented in Table VIII. Thompson and Bright (1977) tested the effects of two drilling fluid components and a whole fluid on the clearing rate of three species of coral. All three species could effectively clear barite and aquagel but were unable to clear the used drilling fluid which proved lethal.

Theoretical dilution ratios have predicted dilutions of 1,000 to 1 at approximately 1,000 feet from the outfall for a typical (40 bbl/hr) drilling discharge and field observations have found even greater actual dilutions (OOC, 1976). Therefore, drilling fluids for the most part would be expected to have little acutely toxic effect on marine ecosystems.

#### B. Field Studies

Due to the lack of scientifically generated information with regard to the fate and effects of drilling fluids disposed of into the marine ecosystem, several field studies have been conducted in an effort to determine the effects of such discharges *in situ*.

Mobil Oil Corporation funded a monitoring study of their drilling operations near the East Flower Garden Bank offshore Texas. Sediment and sea water were analyzed for barium, chromium, iron, lead and hydrocarbons before, during and after drilling operations; and observations of the coral reef were made. There was a marked elevation of barium, iron and lead in sediments at the drill site during and after drilling. Barium increased from 22 to 425 parts per million, iron increased from 8.5 to 13,000 ppm, and lead increased from 4.6 to 12.7 ppm. Hydrocarbon levels in sediments did not indicate any effect from drilling operations. The drilling fluids outfall was located near the bottom and the chemical analyses indicate that this served to concentrate them near the drill site and prevented them from reaching the coral reef (Continental Shelf Associates, 1975).

Union Oil Company funded a monitoring study of their drilling activities near the West Flower Garden Bank offshore Texas to assess the deleterious effect, if any, of their operations on this coral reef. The drilling fluid outfall was placed near the sea floor as a precautionary measure to protect the coral reef. On the basis of repetitive observations involving quadrat counts of benthonic organisms, quantitative assessment of fish populations, quantitative and qualitative



TABLE II - TYPICAL MUD COMPOSITIONS (OTTEMAN, 1976)

SEAWATER GEL MUD

This type mud is typically used to drill from the base of the conductor casing to the surface casing point. Generally, the seawater gel system will be used from less than 1000 feet to a maximum of 4500 feet. The components used to make up and maintain the required characteristics of this mud system are:

<u>Mud Components</u>	<u>Lbs/Bbl of Mud</u>
1. Drilled Solids	48-60
2. Bentonitic Clay	30-40
3. Caustic - Sodium Hydroxide	0.5-1.5
4. Mica Flakes	0.0-.5
(Lost Circulation Material)	
5. Cellulose Polymer	0.0-.25
6. Seawater	As required - approx. 10#/bbl salt from the sea water

LIGHTLY TREATED LIGNOSULFONATE SEAWATER/FRESHWATER MUD

As the hole is deepened below surface casing it becomes necessary to start adding additional materials to maintain the desired mud characteristics. Slowly fresh water is substituted for sea water as the depth and temperature increase. A typical 10.0-10.5 pound per gallon lightly treated lignosulfonate system used to about 10,000 feet would include:

<u>Mud Components</u>	<u>Lbs/Bbl of Mud</u>
1. Drilled Solids	55-70
2. Bentonitic Clay	20-30
3. Barium Sulfate - Weight Material	45-60
4. Caustic - Sodium Hydroxide	1.0-2.0
5. Lignosulfonate	4-6
6. Lignite	0.0-3.0
7. Cellulose Polymer	0.0-.25
8. Seawater/Freshwater	As required - approx. 5#/bbl salt from 50/50 seawater- freshwater.

LIGNOSULFONATE FRESHWATER MUD

The deep portion of a typical well (below approximately 10,000 ft.) would require a freshwater lignosulfonate mud system in order to maintain the mud properties as desired for proper hole maintenance. A typical 10.0-11.0 pound per gallon lignosulfonate treated mud system would include:



<u>Mud Components</u>	<u>Lbs/Bbl of Mud</u>
1. Drilled Solids	65-80
2. Bentonitic Clay	20-30
3. Barium Sulfate - Weight Material	55-150
4. Caustic Sodium Hydroxide	1-2
5. Lignosulfonate	4-8
6. Lignite	3-8
7. Defoamer/Detergents	0.5
8. Fresh water	As required

Table III - Drilling Fluid Components Discharged  
for an 18,000 foot well

<u>Material</u>	<u>Weight (short tons)</u>
barium sulfate	375.0
drilled solids	269.5
bentonite clay	125.5
lignosulfate	20.7
lignite	20.0
sodium hydroxide	6.8
defoamer/detergent	1.2
cellulose polymer	0.3

Table IV - Types of Bactericides Currently Used in Drilling Fluids

Aldehydes	- Formaldehyde, paraformaldehyde, gluteraldehyde
Chlorinated Phenols	- Pentachlorophenol, alkyl dichlorophenol, sodium salts of phenols
Quaternary Amines	- Alkyl dimethyl ammonium chloride, coco dimethyl benzyl ammonium chloride
Diamine Salts	- Acetate salts of coco or tallow diamines
Other	- Caustic, alkyl phosphates, heavy metal salts



Table V - Summary of Published Drilling Fluid Component Toxicities  
(Adapted from McAuliffe and Palmer, 1976)

Test Material	Bioassay** Media	Test Organism	Toxicity	
			LC50-96(a), ppm	(b) (Unless otherwise indicated)
Adgo F28	F	Rainbow trout	480,000	
Ammonium phosphate	F	Rainbow trout	100	(toxic)
Ammonium sulphate	F	Rainbow trout	100	(toxic)
Aquagel (Wyoming Bentonite)	M	American oyster	7,500	(nontoxic)
Barite	M	American oyster	50-60	(LC50-216)
	M	Various organisms	7,500	
	F	Sailfin molly	100,000	
	M	Sailfin molly	100,000	
	F	Rainbow trout	7,500	(threshold LC50)
	F	Rainbow trout	24,000	
	F	Rainbow trout		nontoxic
Barite fluid extract	M	White shrimp	265	
Bark extract modified hemlock	M	American oyster		nontoxic
Baroyd	F	Rainbow trout	527-836*	
Ben-Ex	F	Rainbow trout	10,000	
Bentonite	M	American oyster	110-119	(LC50-192 day)
Bentonite	F	Rainbow trout	28,570	(nontoxic)
Bentonite fluid extract	F	Rainbow trout	5.6-10*	(LC50-10 day)
B-Free				
Calcium carbonate	F	Sailfin molly	100,000	(100% Survival)
Calcium chloride	M	Sailfin molly	100,000	
	F	Water flea (Daphnia)	920	(Threshold immobilization)
Calcium chloride	F	Mosquito fish	13,400	
Calcium chloride	F	Bluegill	10,650	
Capryl alcohol	F	Rainbow trout	56-100*	
Carbonox (lignitic material)	M	Various organisms	7,500	
Carboxy methyl cellulose, regular	F	Rainbow trout	10,000	
Carboxy methyl cellulose, Hi-Vis	F	Rainbow trout	10,000	



Table V (continued)

Test Material	Bioassay** Media	Test Organism	Toxicity LC50-96(a), ppm(b) (Unless otherwise indicated)
Caustic soda (NaOH)	F	Rainbow trout	730
Cellulose-calcium carbonate workover additive	M	White shrimp	1,925
Cement (oil well)	M	Various organisms	70-450
Chromate Cr+6, soft water	F	Mosquito fish	107
Chrome lignosulfonate	F	Sailfin molly	7,800
Chrome lignosulfonate	F	Rainbow trout	5,600
Chrome lignosulfonate	M	White shrimp	465
Chrome Lignosulfonate	M	Sailfin molly	12,200
Crude oil	F	Rainbow trout	400 (lethal)
Diatomaceous earth fluid extract	F	Rainbow trout	14,285 (not lethal)
Dichromate Cr+6, hard water	F	Bluegill	133
Dichromate Cr+6, soft water	F	Mosquito fish	100
	F	Bluegill	118
Dodecyl sodium sulphate	F	Rainbow trout	5-7
Dominion rig wash	F	Rainbow trout	10-18
Ferrochrome lignosulfonate	M	Rainbow trout	1,140-2,050
Fibertex	M	Various organisms	7,500
Formaldehyde	F	Water flea (Daphnia)	2 (48-hr thresh- old conc.)
	M&F	Salmon	28 (critical)
Gilsonite, powdered	F	Rainbow trout	100 (nontoxic)
Gypsum	F	Rainbow trout	756,000
Imperes (progelantized starch)	M	Various organisms	500-7,500
Iron Carbonate (siderite)	F	Sailfin molly	100,000
Iron lignosulfonate	M	White shrimp	2,100



Table V (continued)

Test Material	Bioassay** Media	Test Organism	Toxicity	
			LC50-96(a), ppm(b)	(Unless otherwise indicated)
Jelflake (shredded cellophane)	M	Various organisms	7,500	
Kelzan-XC (polymer Xanthum gum)	F	Rainbow trout	320-560*	
Lignite	F	Sailfin molly	24,500	
Lignite	M	Sailfin molly	15,000	(100% survival)
Lignosulfonate thinners	F	Rainbow trout	100	(toxic)
Metso beads	F	Rainbow trout	100-560*	
Mica (mica flakes)	M	Various organisms	7,500	
Montmorillonite clay	F	Water flea	100	(toxic)
Oilfos (sodium tetraphosphate)	M	Various organisms	7,500	
Paraformaldehyde	F	Rainbow trout	46-78*	
Phosphoric acid ester dispersant	F	Rainbow trout	10	(toxic)
Polyacrylamide bentonite flocculent	F	Rainbow trout	100	(nontoxic)
Polyacrylate, low molecular wt.	M	White shrimp	3,500	
Potassium chloride	F	Water flea (Daphnia)	432	(threshold conc.)
Potassium chloride	F	Water flea (Daphnia)	317	(LC50-48)
Potassium chloride	F	Mosquito fish	920	
Potassium chloride, reagent grade	F	Bluegill	2,010	
Potassium chromic sulphate	F	Rainbow trout	1,920-2,090*	
Potassium chromic sulphate Cr+3, soft water	F	Rainbow trout	1	(lethal)
Potassium chromic sulphate Cr+3, hard water	F	Bluegill	560-1,000*	
	F	Bluegill	8.5	
	F	Bluegill	72	



Table V (continued)

Test Material	Bioassay** Media	Test Organism	Toxicity	
			LC50-96(a), ppm(b)	(Unless otherwise indicated)
Quadrafos	M	Various organisms	500-7,500	
Quebracho	F	Sailfin molly	135	
Rig wash compound	F	Rainbow trout	7,200 (lethal)	
Skot-free	F	Rainbow trout	36-76*	
Sodium acid pyrophosphate	F	Various organisms	500 (toxic)	
Sodium acid pyrophosphate	F	Sailfin molly	1,200	
Sodium bicarbonate	F	Rainbow trout	7,500	
Sodium chloride	F	Water flea (Daphnia)	3,680 (threshold conc.)	
Sodium chloride	F	Water flea (Daphnia)	4,625 (LC50-48)	
Sodium chloride	F	Mosquito fish	17,550	
Sodium pyrophosphate	F	Bluegill	12,946	
Sump fluid, composite	F	Rainbow trout	662-1,140*	
Sump fluid, surface	F	Lake chub	225,000	
Swift's rig wash	F	Lake chub	810,000	
	F	Rainbow trout	11-42*	
Tanino	M	American oyster	90-170 (LC50-108)	
Torq-trim	F	Rainbow trout	1,580-3,250*	
Tricron	F	Rainbow trout	46-87*	
White lime	M	Various organisms	70-450	

(a) LC50-X or TLm-X = lethal or median concentration giving 50% mortality in X hours

(b) ppm is mg/l or ul/l

\* range of 95% confidence level

\*\* F = Freshwater

M = Estuarine or marine water



Table VI. Toxicities of Bactericides Used in Drilling Fluids  
(Adapted from Robichaux, 1975)

Bactericide Type	TL50 (ppm)	LD50 (gm/kg)
	Fish	Birds
Aldehydes	50-400	5-15+
Chlorinated Phenols	0.2-1	5-15+
Quaternary Amines	0.2-5	>5
Diamine Salts	0.4-4	>5

Table VII - Static Acute Toxicity Bioassays on Drilling Fluids  
(Adapted from OOC, 1976)

<u>Test Material</u>	<u>Test Fish</u>	<u>96-hr TL50, ppm</u>
Rig 51 drilling fluid	Lake chub	120,000
	Rainbow trout	8,300
	Ninespine sticklebacks	103,000
	Rainbow trout	112,000
	Rainbow trout	53,000
	Lake chub	35,500
	Rainbow trout	42,000
Immerk B-48 drilling fluid	Lake whitefish	25,000
	Rainbow trout	75,000
Shell Kipnik drilling fluid	Lake whitefish	25,000
	Rainbow trout	42,000
Immerk B-48 mud filtrate	Lake whitefish	50,000



Table VIII - Acute Toxicity of Drilling Fluids to Sensitive Marine Organisms  
(Adapted from EG&G, 1976)

Strictly Regulated Material	96-hr EC <sub>50</sub> or LC <sub>50</sub> (ppm)*		
	Alga (EC <sub>50</sub> )	Copepod (LC <sub>50</sub> )	Atlantic Silverside (LC <sub>50</sub> )
<u>Drilling Muds</u>			
Mud No. 1 (saltwater gel mud)	100 1,000**	100	100,000
Mud No. 2 (lightly treated ferrochromelignosulfonate saltwater/freshwater mud)	3,700	10,000	48,500
Mud No. 3 (ferrochromelignosulfonate freshwater mud)	320 560**	100	100,000

\* EC<sub>50</sub> (median effective concentration) is concentration of material that produced 0.50 reduction of cell numbers as compared to a control. LC<sub>50</sub> (median lethal concentration) is concentration of material that caused 0.50 mortality of test organisms.

\*\* These values are conservative approximations of EC<sub>50</sub>. Conventional estimates of EC<sub>50</sub> could not be derived because of unusual response pattern of organisms during bioassays.



assessments of coral behavior and stress reactions and determinations of "health" and pathological conditions among hermatypic corals and other epibenthic organisms, the investigation found no discernible effect on the reefal communities.

Post drilling barium analyses indicated major amounts to the north and east-southeast of the drill site within 300 meters of the site. Transmissivity measurements during drilling indicated a turbid water plume that extended over 1,000 meters to the south of the drill site toward the reef (Marine Technical Consulting Services, 1976).

Continental Oil Company funded a study of their drilling operations near Baker Bank offshore Texas. In this case, the drilling fluids were disposed of at the sea surface. On the basis of sediment barium levels before and after drilling, a major increase in barium was found at the drill site. Pre-drilling barium levels ranged from 344 to 419 parts per million. Post-drilling levels were as high as 1618 parts per million at a distance of 500 meters from the drill site but decreased to a maximum of 678 ppm at a distance of 1,000 meters (Continental Shelf Associates, 1976a).

Burmah Oil and Gas Company funded an investigation of their drilling operations near Stetson Bank, offshore Texas. The drilling fluids outfall was located near the seafloor to protect the bank. Significant increases in sediment barium concentrations were limited to within 300 meters of the well site and no increase was noted on the bank itself (Continental Shelf Associates, 1976b).

In a BLM funded study offshore Texas, sediment barium levels were found to increase during drilling throughout the 1,000-meter sampling radius. Post-drilling samples taken 3 months after the termination of drilling showed somewhat decreased barium levels with the high levels remaining at the drill site. Presumably, the barium sulfate deposited during the drilling operation had been redistributed and diluted prior to the post drilling analysis (SUSIO, 1976).

In another BLM funded study offshore Texas, sediment concentrations of zinc, barium and cadmium increased markedly at the drill site compared to pre-drilling levels (Univ. of Texas, 1977).

In a recently published EPA funded study (NOAA, 1977), an enrichment of barium, lead, zinc, and strontium was found in sediments near production platforms. The higher barium content can be attributed to drilling fluids; however, the overall variations were subtle and hardly indicative of major contamination.

## IV. Discussion

Drilling fluids are one of the necessary materials for drilling wells in the search for oil and gas resources on the Outer Continental Shelf. Except for those which contain oil, these fluids have historically been disposed of into the marine ecosystem. Acute toxicity bioassays indicate that most drilling fluid components are relatively non-toxic; however, certain minor constituents, such as the chlorinated hydrocarbon bactericides, are toxic and persistent. Field studies indicate that the initial dilution and subsequent dispersion of drilling fluids results in minor changes in the chemical composition of the surrounding sediments. When drilling fluids are disposed of at or near the sea surface, then the radius of the impact zone is at least 1 km; however, if the outfall is located near the sea bottom, the radius of the zone of impact is generally less than 300 m. This latter disposal method has been found to be useful when drilling near biotic communities which are sensitive to turbidity.

## V. Conclusions

Through consideration of the above information, the following conclusions can be arrived at:

- a. Non-oil-based drilling fluids are relatively non-toxic.
- b. The disposal of these drilling fluids into the marine ecosystem can be accomplished with little or no environmental degradation with the exception of those which contain chlorinated hydrocarbon bactericides.
- c. Drilling fluids which contain chlorinated hydrocarbon bactericides should not be disposed of into the marine ecosystem.
- d. Near-bottom disposal is an effective means of limiting initial impacts of drilling fluids to within 300 meters of the drill site.

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APPENDIX K  
AIR QUALITY

[6560-01]

[FRL 88-4]

## APPLICABILITY OF CLEAN AIR ACT TO MODIFICATION OF EXXON CORP.'S PLATFORM HONDO

## Determination

AGENCY: Environmental Protection Agency.

ACTION: Notice of final determination of applicability.

SUMMARY: It is the determination of the Environmental Protection Agency (EPA) that Exxon Corp.'s proposed installation of an Offshore Storage and Treatment facility on the Outer Continental Shelf off the coast of Santa Barbara County, Calif., will constitute a modification of Exxon's platform Hondo. It is the further determination of EPA that this modification is subject to review under the new source review and prevention of significant deterioration provisions of the Clean Air Act, as amended (42 U.S.C. 7401 et seq.) and EPA's implementing regulations (40 CFR 52.253 and 52.270).

## FOR FURTHER INFORMATION CONTACT:

William Pierce, Chief, Permits Branch, Enforcement Division, Region IX, 215 Fremont Street, San Francisco, Calif. 94105, 415-556-3450.

## SUPPLEMENTARY INFORMATION:

## PRELIMINARY STATEMENT

This decision marks the first time that EPA has sought to apply the provisions of the Clean Air Act and the regulations promulgated thereunder to activities on the Outer Continental Shelf. In the past there has been uncertainty as to the applicability of these laws on the Outer Continental Shelf, and it is with respect to the Exxon Hondo facility that the legal questions have first been systematically addressed.

Because this is a question of first impression, and because the decision as to the Exxon Hondo facility is based on a determination of national scope and effect, the decision is being made by the Administrator. It is my intent that the same legal principles will be applied to all future activities on the Outer Continental Shelf. In the future, decisions as to the applicability of the requirements discussed below to facilities on the Outer Continental Shelf will be made by the EPA Regional Administrators, as are other routine applicability determinations.

## DESCRIPTION OF PROJECT

In 1938, several oil companies including Exxon Corp. obtained oil exploration and production leases for 17 tracts located on the Federal Outer Continental Shelf in the northwest portion of the Santa Barbara Channel. These leases were consolidated into the Santa Ynez Unit with Exxon Corp. named as the unit operator. The first tract to be developed in the Santa Ynez Unit is the Hondo field. Initial production from the Hondo field is expected to be 30,000 bbl/day of oil and 30 MMSCF/day of natural gas.

The development plan submitted in 1971 by Exxon to the U.S. Geological Survey proposed two alternatives for development of the Hondo field. Under both alternatives, Exxon proposed to construct a platform for exploration and production which is referred to as platform Hondo. Exxon, however, developed alternative plans for storage and treatment of the oil produced by platform Hondo. Under the "onshore" alternative, it was proposed that the oil would be sent to shore for treatment and storage via pipeline until it could be loaded onto tankers from a terminal facility anchored within State waters. An "offshore" alternative was proposed by Exxon in case the necessary permits and approvals for the "onshore" alternative could not be obtained. Under the "offshore" alternative, Exxon proposed to construct an offshore storage and treatment (OS&T) facility which would be anchored near platform Hondo beyond the 3 mile limit of State jurisdiction. The transfer of oil to tankers would occur from the OS&T under the offshore alternative.

Exxon's development plan for the Hondo field was approved by the Department of Interior in August 1974 after preparation and circulation of a



lengthy Environmental Impact Statement. Subsequently, Exxon was unable to obtain approval for the onshore alternative from the Coastal Commission of the State of California on terms which were acceptable to Exxon. Exxon abandoned its attempts to receive a permit from the State of California for its onshore facility in March 1976. Exxon then sought approval from the Department of Interior for the offshore alternative which approval was obtained in July 1976. Fabrication of platform Hondo occurred at a shipyard near San Francisco. The platform was then towed from San Francisco Bay to the Santa Barbara channel where it was set in position. Installation of platform Hondo was completed in June 1976.

Production and support facilities on the platform will perform the major functions of oil and gas separation, gas compression and dehydration, and produced-water injection. Oil/water emulsion from the production separators flows into surge tanks from which it will be metered and transferred by electric motor driven pumps to the OS&T via a submarine pipeline. A portion of the gas which has been compressed and dehydrated will be used for gas lift and for fuel on both the platform and the OS&T. For an interim period, excess gas will be reinjected into the reservoir.

The OS&T facility is a converted tanker with processing equipment mounted on its deck. It will be moored to a Single Anchor Leg Mooring System (SALM) approximately 3.2 miles from shore, just outside State jurisdiction. The OS&T will provide equipment for crude oil dehydration and sweetening, water treating and power generation both for Platform Hondo and for the OS&T. In addition, the OS&T will store the treated crude oil until it can be transferred to a tanker for transport to refineries.

On the OS&T, free water will first be removed from the oil/water emulsion. Then the emulsion will be heated and electrostatically treated to break the tight emulsion. The dehydrated crude oil will then go to a crude stabilization system where hydrogen sulfide will be stripped out. The resulting sweet crude oil be cooled and stored in the OS&T cargo tanks.

Produced water from the crude oil dehydration process will flow to a series of tanks and vessels equipped with skimming devices to remove oil and suspended solids. Oil that is collected will go to a rerun tank for reprocessing. The water will be filtered and returned to the Hondo platform for injection into a subsurface formation.

Natural gas will flow from the platform to the OS&T through a separate subsea pipeline. The gas will be sweetened and used for fuel gas and for gas

blanketing of various tanks and processing equipment. Electric power for the OS&T and supplemental power for the Hondo platform will be supplied by gas fired turbine generators on the OS&T. Power will be transferred to the platform via a subsea power cable.

An ocean-going tug-barge is planned for transport of oil from the OS&T to marine terminals for delivery to refineries. Other vessels may also be used in this service to supplement the primary shuttle vessel. At a daily oil rate of 30,000 barrels per day, an average per day, an average of 5.2 loads per month will be required. It is anticipated that 50 more wells may be drilled from two subsea production facilities in the early 1980's and that peak field production may total 60,000 bbl/day of oil and 60 MMSCF per day of gas.

#### LEGISLATIVE BACKGROUND

In 1970, Congress adopted extensive amendments to the Clean Air Act (Pub. L. 91-604) in order to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare. Section 109 of the amendments directed the Administrator of EPA to promulgate national ambient air quality standards for any air pollutant which the Administrator determined has an adverse effect on public health and welfare and for which air quality criteria had been established. Pursuant to this authority, the Administrator promulgated national primary ambient air quality standards at levels necessary to protect public health for sulfur dioxide (SO<sub>2</sub>), particulate matter (PM), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), hydrocarbons (HC), and photochemical oxidants (40 CFR part 50). The Administrator also promulgated national secondary ambient air quality standards for these pollutants at levels necessary to protect public welfare (40 CFR part 50).

Under the Clean Air Act, the various states have the primary responsibility for attaining and maintaining the national ambient air quality standards. Section 110 of the Clean Air Act requires each State to adopt a State Implementation Plan (SIP) containing emission limitations and such other measures as necessary to insure attainment and maintenance of the national standards as expeditiously as practicable but in no case later than 3 years from the date of plan approval by the Administrator (42 U.S.C. 7410). The Administrator of EPA is required by section 110(b) to promulgate substitute regulations if the State fails to submit an implementation plan or if portions of the plan are inadequate to attain and maintain national ambient standards. Pursuant to this authority, the Administrator has promulgated regulations for California which will

assure prevention of significant deterioration (PSD) of air quality (40 CFR 52.270) and which will require review of new and modified stationary sources of air pollution for specific air quality control regions (40 CFR 52.233).

#### PREVENTION OF SIGNIFICANT DETERIORATION

In August 1977, Congress adopted comprehensive amendments to the Clean Air Act which substantially strengthened provisions governing prevention of significant deterioration of air quality and new source review for non-attainment areas. (Pub. L. 95-95). Section 165 of the Act regarding prevention of significant deterioration specifies that no major emitting facility may be constructed in any area after date of enactment of the 1977 amendments unless a permit has been issued for the proposed facility in accordance with the requirements of section 165 (42 U.S.C. 7474). The term "major emitting facility" is defined by section 169(1) of the act as a stationary source of air pollutants within specified categories of sources, including petroleum storage and transfer facilities with a capacity exceeding three hundred thousand barrels, which emit, or have the potential to emit, one hundred tons per year or more of any air pollutant. (42 U.S.C. 7479(1)). In addition to specific source categories, section 169(1) provides that the term "major emitting facility" also includes any source with the potential to emit two hundred and fifty tons per year or more of any air pollutant (42 U.S.C. 7479(1)). On November 3, 1977, EPA published proposed regulations for the purpose of implementing the permit requirements of section 165 (42 FR 57479). Under EPA's proposed regulations, the new pre-construction review requirements of section 165(a) would be applicable to any new or modified major stationary source subject to EPA's existing prevention of significant deterioration regulations and which has not obtained a PSD permit pursuant to those regulations prior to March 1, 1978.

EPA's existing PSD regulations, promulgated on December 5, 1974 (39 FR 42510), prohibit construction of a new stationary source without a PSD permit where the new source is in one of 19 specified categories (40 CFR 52.21). A modification to a stationary source is subject to review under EPA's present PSD regulations only where there will be a net increase in emissions of sulfur dioxide or particulate matter. Pursuant to section 168, these regulations will remain in effect until EPA promulgates final revisions to the proposed PSD regulations published on November 3, 1977.

#### NEW SOURCE REVIEW

On June 18, 1973, EPA promulgated requirements for State implementa-



tion plans regarding review of new and modified stationary sources of air pollution (40 CFR 51.18, 38 FR 15836). Subsequently, EPA disapproved the new source review provisions of California's State implementation plan for several air pollution control districts and promulgated substitute regulations applicable to construction of new and modified stationary sources within those districts (40 CFR 52.233). Section 52.233(f) provides in part that no owner or operator of a new or modified stationary source may commence construction within the Santa Barbara County Air Pollution Control District or Ventura County Air Pollution Control District without obtaining approval from the Administrator of EPA. Approval may be granted by EPA only where the owner or operator of the source demonstrates that the source will be operated without violating the State implementation plan and will not prevent or interfere with attainment or maintenance of any national standard.

On December 21, 1976, EPA promulgated an Interpretative Ruling prescribing procedures for implementation of the new source review rules in nonattainment areas (41 FR 55524). The Interpretative Ruling prohibits construction of a "major source" or "major modification" in a nonattainment area, or which would impact a nonattainment area, without a permit specifying stringent requirements. A "major source" is defined by the Interpretative Ruling to cover any structure, building, facility, installation, or operation (or combination thereof) for which the allowable emission rate of particulate matter, sulfur oxides, nitrogen oxides, or non-methane hydrocarbons is 100 tons or more per year, or for which the allowable emission rate of carbon monoxide is 1,000 tons per year or more. The Interpretative Ruling also applies to a "major modification" which is defined as a modification to an existing source which increases the allowable emission rate of particulate matter, sulfur oxides, nitrogen oxides, or non-methane hydrocarbons by 100 tons per year or more or increases allowable emissions of carbon monoxide by 1,000 tons per year or more.

The principal requirements imposed by the Interpretative Ruling on a new source which would exacerbate an existing violation of a National Ambient Air Quality Standard are: (1) that the new source or major modification will meet an emission limitation which specifies the lowest achievable emission rate for the particular type of source; (2) that all existing sources owned by the applicant located in the air quality control region are in compliance with all requirements of the State implementation plan; (3) that emission reductions from existing

sources in the area of the proposed source are required such that total emissions from the existing and proposed source are sufficiently less than total allowable emissions from existing sources under the state implementation plan so as to represent reasonable progress toward attainment of national ambient air quality standards; and (4) that emission offsets will provide a positive net air quality benefit in the affected area. These requirements were established by EPA in order to assure that construction of major sources and major modifications would not further aggravate air quality in nonattainment areas but would result in reasonable progress toward attainment of the applicable national ambient air quality standards.

Congress expressly ratified this approach by enacting section 129 of the Clean Air Act Amendments of 1977 (Pub. L. 95-95). That section provides that EPA's Interpretative Ruling shall apply, with a minor change regarding the appropriate baseline for emission offsets, in nonattainment areas until July 1, 1979, when the more stringent permit requirements of section 173 (42 U.S.C. 7503) will become applicable in nonattainment areas.

Pursuant to section 107(d) of the Clean Air Act Amendments of 1977 (42 U.S.C. 7407(d)), EPA promulgated a list of attainment and nonattainment areas (43 FR 8962, March 3, 1978). This list was developed from submissions by the various states and is to be used in implementing the prevention of significant deterioration and new source review provisions of the Act. Santa Barbara County and Ventura County are in the South Central Coast Air Basin. All of Santa Barbara County and Ventura County are officially classified as nonattainment areas for photochemical oxidants. The air quality maintenance area (AQMA) of Santa Barbara County is classified as a nonattainment area for total suspended particulate matter (TSP) and carbon monoxide (CO). A portion of the Santa Barbara non-AQMA and the southern portion of Ventura County are also classified as nonattainment areas for TSP. Ventura County is classified as an attainment area for SO<sub>x</sub>. Except for these areas and these pollutants, Santa Barbara and Ventura Counties are designated as areas which cannot be classified on the basis of existing data for TSP, SO<sub>x</sub>, CO, and NO<sub>x</sub>. Orange County and portions of Los Angeles, Riverside, and San Bernardino Counties are within the South Coast Air Basin. This air basin is officially classified as a nonattainment area for photochemical oxidants, CO, NO<sub>x</sub> and TSP. In addition, the portion of Los Angeles County within the South Coast Air Basin is classified as nonattainment for SO<sub>x</sub>. Orange County and the portions of Riverside

and San Bernardino Counties within the basin are listed as attainment areas for SO<sub>x</sub>.

#### ESTIMATED EMISSIONS FROM EXXON'S FACILITIES

EPA's initial estimates of air pollutant emissions from Exxon's platform Hondo and the proposed associated offshore oil storage and treating facility (OS&T) were based on information supplied by Exxon in a letter dated October 1, 1976. Subsequently, Exxon submitted additional information on several occasions to either replace or supplement information in their original submittal. This subsequent information has been considered in EPA's updated emission estimates.

Emission sources located on Exxon's platform Hondo can be classified into three general categories, based on the frequency at which they can be expected to emit pollutants: (1) continuous, (2) intermittent, or (3) unscheduled. For the initial level of Hondo development (30,000 BBL/D oil, 30 MM CF/D natural gas) continuous sources will include three (3) 800 KW gas fired turbine generators, one (1) 1.0 MM BTU/hr gas fired stack pilot and fugitive hydrocarbon sources including hydrocarbon pumps and valves and 3-200 BBL fixed roof diesel storage tanks. Intermittent sources of emissions include two (2) emergency firewater pumps, each of which will be operated approximately fifteen (15) minutes per week for test purposes, tank filling emissions from the diesel storage tanks and two (2) diesel engine crane engines. Unscheduled emissions, which were not considered in EPA's emission estimates would occur from the flare stack as a result of a compressor malfunction. Information regarding additional emission sources on the platform for peak Hondo production (60,000 BBL/D oil, 60 MM CF/D gas) and the resultant emissions has not been submitted to EPA.

Exxon submitted estimates of annual average emissions from initial phase production at platform Hondo in their October 1, 1976, letter to EPA. These estimates included 2.62 lbs/hr (11.5 T/yr) total hydrocarbons, 6.98 lbs/hr (30.6 T/yr) SO<sub>x</sub>, 10.54 lbs/hr (46.2 T/yr) NO<sub>x</sub>, and 0.08 lbs/hr (0.4 T/yr) particulate matter. Assuming that annual emissions would double for the ultimate production scenario of 60,000 BBL/D oil, 60 MM CF/D gas, the emissions would be expected to be 23 T/yr of total hydrocarbons, 61 T/yr of SO<sub>x</sub>, 92 T/yr NO<sub>x</sub> and 0.8 T/yr particulate matter. Assuming the emission rates listed above, Exxon's platform Hondo by itself would not be considered a "major source" (100 T/yr) as defined by EPA's Interpretative Ruling.

Emission sources associated with the proposed OS&T can also be classified



TABLE II.—Atmospheric emissions (from Exxon OS&amp;T (60,000 bbl/d in pounds per hour (tons per year)) —Continued

	NOx	Hydrocarbons	CO	Particulates	SOx
Continuous emissions					
25,000 hp turbine generator.....	110 (482)	2.34 (10.2)	11.7 (51.2)	0.7 (3.1)	2.4 (10.3)
Flare stack pilot.....	.1 (.42)	.006 (.028)	.016 (.089)	.011 (.050)	.011 (.047)
Total continuous emissions.....	111 (488)	2.35 (10.2)	11.7 (51.3)	.71 (3.2)	2.57 (10.6)
Intermittent emissions					
Shuttle vessel.....	46 (11.8)	1.483 (6.16)	19 (4.8)		4.9 (1.24)
Acid gas incinerator.....	.78 (.34)				3.20 (14.0)
800 kW generator.....	4.8 (.12)	.38 (.01)	1.1 (.027)	.35 (.01)	3.6 (.084)
Firewater pump.....	3.1 (.08)	.25 (.008)	.67 (.017)	.22 (.0057)	.20 (.0053)
Total maximum hourly emission.....	186	1.486	32.5	1.3	696
Total annual emissions.....	(500)	(656)	(58.1)	(3.2)	(1,751)

The data listed in Tables I and II establish that the operation of the OS&T will result in emissions greater than 100 tons per year for hydrocarbons (even accepting Exxon's calculations, which assume the application of some control systems), nitrogen oxides and sulfur oxides. The OS&T will thus be a "major source" for those pollutants for purposes of new source review. Since emissions of those pollutants will be greater than 250 tons per year, the OS&T will also be a major emitting facility for purposes of prevention of significant deterioration.

EPA's estimates of emissions from the proposed OS&T for the initial and final phases of production are included in Table I and Table II, respectively.

ly. Information submitted by Exxon on January 20, 1978, indicates minor changes to EPA's estimates but these changes have not been incorporated as of this date because they have not been substantiated.

On January 20, Exxon presented information on a vapor balance system which is being studied as a possible means of controlling hydrocarbon emission during loading of the shuttle tanker and which would purportedly significantly reduce SO<sub>x</sub> emissions from the acid gas incinerator. The impact of such a system has not been considered in EPA's estimates of emissions because Exxon has stated that the balance line has not been fully developed. It is not known, therefore,

as continuous, intermittent or unscheduled. Continuous emission sources on the proposed OS&T include two (2) 25,000 HP gas-fired turbines, the acid gas incinerator, a 1.0 MM BTU/hr gas fired flare stack pilot and fugitive leaks of hydrocarbons. Intermittent sources include a 800 KW auxiliary generator, fired by a 1100 HP diesel fired turbine and (2) 200 HP diesel

TABLE I.—Atmospheric emissions from Exxon OS&amp;T (30,000 bbl/d)

(From data supplied by Exxon in pounds per hour (tons per year))

	NOx	Hydrocarbons	CO	Particulates	SOx
Continuous emissions					
Acid gas incinerator.....	0.6 (2.6)				2.47 (1,080)
25,000 hp turbine generator.....	93 (407)	12.3 (54)	61.6 (270)	0.53 (2.3)	1.8 (7.8)
Flare stack pilot.....	.1 (.42)	.006 (.028)	.016 (.069)	.011 (.050)	.011 (.047)
Total Continuous emissions.....	94 (410)	12.3 (54)	61.6 (270)	.54 (2.35)	2.49 (1,088)
Intermittent emissions					
Shuttle vessel.....	46 (5.9)	1.483 (323)	19 (2.4)		4.9 (.82)
Acid gas incinerator.....	.78 (.17)				3.20 (70)
800 kW generator.....	4.8 (.12)	.38 (.01)	1.1 (.027)	.35 (.01)	3.6 (.094)
Firewater.....	3.1 (.08)	.25 (.008)	.67 (.017)	.22 (.0057)	.20 (.0053)
Total maximum hourly emission.....	148	1.496	82	1.1	579
Total annual emissions.....	(416)	(377)	(272)	(2.37)	(1,159)

TABLE II.—Atmospheric emissions (from Exxon OS&amp;T (60,000 bbl/d in pounds per hour (tons per year))

	NOx	Hydrocarbons	CO	Particulates	SOx
Continuous emissions					
Acid gas incinerator.....	1.2 (5.2)				365 (1,800)



whether Exxon will be able to install the vapor balance system in the future. It is clear, however, that the vapor system will not be installed until after the OS&T has begun operation.

#### APPLICABILITY OF CLEAN AIR ACT TO OUTER CONTINENTAL SHELF

Although the Clean Air Act is not expressly applicable to facilities located on the Outer Continental Shelf, EPA has determined that the new source review and prevention of significant deterioration provisions of the Clean Air Act are applicable to sources located on the Outer Continental Shelf pursuant to the Outer Continental Shelf Lands Act, 43 U.S.C. 1331, et seq. Section 1333(a)(1), of the OCS Lands Act provides that the laws of the United States are applicable to fixed structures located on the Outer Continental Shelf:

The Constitution and laws and civil and political jurisdiction of the United States are extended to the subsoil and seabed of the Outer Continental Shelf and to all artificial islands and fixed structures which may be erected thereon for the purpose of exploring for, developing, removing, and transporting resources therefrom, to the same extent as if the Outer Continental Shelf were an area of exclusive Federal Jurisdiction located within a State: *Provided, however,* That mineral leases on the Outer Continental Shelf shall be maintained or issued only under the provisions of this subchapter.

Clearly, the Clean Air Act is a law of the United States within the meaning of the OCS Lands Act. Although the OCS Lands Act was enacted several years before the Clean Air Act, the legislative history of the OCS Lands Act reveals that Congress intended to extend the whole law of the United States to the seabed of the OCS and fixed structures located thereon.

The basic goals of the Clean Air Act are the attainment and maintenance of the national ambient air quality standards and the prevention of significant air quality deterioration. Air quality must be assured "within the entire geographic area" comprising each State (§107(a)) through the submission of SIP's by States under section 110(a) (or the promulgation of SIP's by EPA under section 110(c)).

SIP's are the basic mechanisms for protecting air quality in the United States; it would therefore be meaningless to "extend" the Clean Air Act to OCS structures without also extending SIP's. However, because the act is concerned only with protecting air quality over the United States, SIP's should not be extended to a structure which is so far from shore that its emissions could not impact on the U.S. air quality. EPA should therefore determine whether a structure could impact on U.S. air quality before applying a SIP requirement.

Fine questions as to whether a State-submitted SIP provision is

"State" or "Federal" law are irrelevant. The OCS Lands Act provides:

To the extent that they are applicable and not inconsistent with this subchapter or with other Federal laws and regulations of the Secretary now in effect or hereafter adopted, the civil and criminal laws of each adjacent state, now in effect or hereafter adopted, amended, or repealed are declared to be the law of the United States for that portion of the subsoil and seabed of the Outer Continental Shelf, and artificial islands and fixed structures erected thereon, which would be within the area of the State if its boundaries were extended seaward to the outer margin of the Outer Continental Shelf, and the President shall determine and publish in the FEDERAL REGISTER such projected lines extending seaward and defining each such area. All of such applicable laws shall be administered and enforced by the appropriate officers and courts of the United States. State taxation laws shall not apply to the Outer Continental Shelf.

In view of sections 1333(a) (1) and (2) of the OCS Lands Act, the Clean Air Act and the State Implementation Plans promulgated thereunder apply to all activities on the Outer Continental Shelf that can have an adverse effect on air quality over the United States.

EPA has determined, moreover, that application of the applicable State implementation plan to exploration and production facilities located on the Outer Continental Shelf is necessary to assure that national ambient air quality standards can be achieved in those areas presently classified as non-attainment areas. Unless regulated, emissions of air pollutants from sources located on the Outer Continental Shelf will adversely impact air quality in such areas by adding additional pollutants to areas where air quality is presently worse than national ambient air quality standards. This problem is particularly severe with respect to emissions of hydrocarbons which are the precursors of photochemical oxidants.

Similarly, where the air quality in on-shore areas adjacent to Outer Continental Shelf areas is better than the National Ambient Standards, it is necessary that the provisions of the Clean Air Act and applicable State implementation plans relating to Prevention of Significant Deterioration apply as well. Unless the emissions from off-shore facilities that may impact these areas are controlled, the objectives of the Clean Air Act will not be achieved.

#### APPLICABILITY OF THE CLEAN AIR ACT TO THE HONDO FACILITY

Among the principal pollutants that will be emitted by the Exxon Hondo facility are hydrocarbons, the precursors of photochemical oxidants. Photochemical oxidants are created principally by the oxidation of hydrocarbons when exposed to sunlight. Since photochemical oxidants or their pre-

cursors can be transported long distances, the focus of regulatory action has been, and must be, on areas where the hydrocarbons originate, not necessarily on areas where the photochemical oxidant levels are measured. Since hydrocarbons are oxidant precursors and because hydrocarbon emissions from the proposed project are anticipated to impact air quality in the South Coast and South Central Coast Air Basins, hydrocarbon emissions will interfere with attainment of the national ambient air quality standards for photochemical oxidants in those areas. Application of the Clean Air Act to facilities located on the Outer Continental Shelf is thus necessary to prevent frustration of the purposes of the Clean Air Act where emissions from those facilities will impact air quality within California.

Since it is believed that emissions from Exxon's operations in the Santa Barbara channel will have an adverse impact upon air quality within Santa Barbara, Ventura, and Los Angeles counties, EPA has determined that the new source review and prevention of significant deterioration provisions of the California State implementation plan should be applied to Exxon's facilities. Since EPA has not yet approved new source review rules or regulations for prevention of significant deterioration for Santa Barbara or Ventura Air Pollution Control Districts, EPA has determined that the new source review and PSD regulations promulgated by EPA for those districts are applicable to Exxon's operations on the Outer Continental Shelf.

Under the new source review requirements of the California State implementation plan, no owner or operator shall commence construction or modification of a stationary source within the Santa Barbara or Ventura Air Pollution Control Districts without obtaining approval from the Administrator of EPA (40 CFR 52.233(f)). Although platform Hondo and Exxon's OS&T will be located on the Outer Continental Shelf beyond the boundaries of those districts, EPA has determined that the new source review requirements are applicable to Exxon's facilities since section 1333(a)(1) of the OCS Lands Act provides that the law of the United States is applicable to fixed structures located on the Outer Continental Shelf "to the same extent as if the Outer Continental Shelf were an area of exclusive Federal jurisdiction located within a State."

For similar reasons EPA has determined that the preconstruction review requirements of EPA's PSD regulations are applicable to the construction or modification of fixed structures on the Outer Continental Shelf. The provisions of EPA's PSD regula-



tions applicable to the Santa Barbara Air Pollution Control District are thus applicable to facilities located on the Outer Continental Shelf adjacent to Santa Barbara county (40 CFR 52.270).

It should be noted that EPA's determination regarding Exxon's planned modification of platform Hondo to incorporate an offshore storage and treatment facility is a matter of first impression. EPA did not assert jurisdiction under the Clean Air Act regarding the initial construction and installation of platform Hondo in 1976 because of uncertainty regarding EPA's authority and because it was believed that emissions of air pollutants from platform Hondo itself would not be significant. Subsequent to the installation of platform Hondo, EPA determined that it has authority under the OCS Lands Act to extend application of the Clean Air Act to facilities located on the Outer Continental Shelf where necessary to assure attainment of national ambient air quality standards. Since the available data indicates that the installation of Exxon's OS&T will result in significant emissions of hydrocarbons, sulfur dioxide, nitrogen dioxide, and carbon monoxide, EPA has concluded that jurisdiction under the Clean Air Act should be asserted regarding this modification of platform Hondo even though jurisdiction was not asserted regarding the initial construction of platform Hondo.

Since the available data indicates that emissions of hydrocarbons, sulfur dioxide, and nitrogen dioxide from the operation of Exxon's OS&T will be greater than 100 tons per year, EPA has determined that the installation of the OS&T will be a major modification to platform Hondo and thus subject to the preconstruction review requirements of the new source review rules for nonattainment areas. In addition, the installation of Exxon's OS&T will be a modification subject to preconstruction review under section 165 of the Clean Air Act and EPA's regulations regarding prevention of significant deterioration since emissions of HC, NO<sub>x</sub> and SO<sub>2</sub> will be greater than 250 tons per year.

For purposes of new source review in nonattainment areas, the Interpretative Ruling defines the term "major modification" to include a modification to any structure, building, facility, installation, or operation (or combination thereof) which increases the allowable emission rate of any criteria pollutant by 100 tons per year except carbon monoxide which requires an increase of 1,000 tons per year (41 FR 55528, December 21, 1976). The term "modification" is defined by section 111(a)(4) of the Act to include "any physical change in, or change in the method of operation of a stationary

source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted" (42 U.S.C. 7411(a)(4)). This definition is applicable to both new source review and prevention of significant deterioration regulations.

Information available to EPA indicates that the installation of Exxon's planned OS&T will involve several physical changes to platform Hondo in order to permit the transfer of oil through a submarine pipeline from the platform to the OS&T. The installation of the OS&T will also constitute a change in the method of operation of platform Hondo which will result in an increase in emissions as the platform converts from the exploration phase of the project to production. Although the development plan for the Santa Ynez Unit contemplated possible use of an OS&T under the "offshore" alternative, this does not exempt the OS&T from the preconstruction review requirements of the new source review and PSD regulations. Under those regulations and sections 165 and 169 of the Clean Air Act, review is required for any source which has not commenced physical on-site construction or which has not entered into binding agreements or contractual obligations for physical on-site construction prior to the effective date of the regulations. Since the information submitted to EPA by Exxon indicates that physical on-site construction of the OS&T has not yet begun, installation of the OS&T is subject to review.

#### RESPONSE TO COMMENTS

During the past year EPA has been in contact with Exxon, the California Air Resources Board, Santa Barbara and Ventura Air Pollution Control Districts, and other entities regarding the application of the Clean Air Act to facilities located on the Outer Continental Shelf. These groups have made various comments regarding EPA's proposed approach which will now be addressed.

Exxon has pointed out in its comments to EPA that EPA has never previously asserted jurisdiction under the Clean Air Act with respect to facilities located on the Outer Continental Shelf despite the fact that hundreds of exploration and production platforms are located on the OCS. As discussed previously, EPA has not asserted jurisdiction in the past over facilities located on the OCS because of uncertainty regarding its authority to subject such facilities to regulation under the Clean Air Act. EPA has subsequently determined that the provisions of the Clean Air Act are applicable to facilities located on the OCS by virtue of section 1333(a) of the OCS Lands Act. In addition, EPA has deter-

mined that it is necessary to assert jurisdiction at this time over platform Hondo and the proposed OS&T because it is anticipated that Exxon's operation of the OS&T will have a significant impact upon air quality in Santa Barbara, Ventura, and Los Angeles counties. Since those areas are presently classified as non-attainment areas for several pollutants, EPA determined that emissions from Exxon's operations should be regulated in order to prevent further deterioration of air quality in those areas despite the fact that EPA has not previously asserted jurisdiction under the Clean Air Act over facilities located on the OCS.

The comments submitted by Exxon also assert that the application of the Clean Air Act to its facilities on the OCS would be inconsistent with its development and production rights as a lessee of the Santa Ynez tract. The acquisition of a leasehold interest, however, does not exempt the lessee from reasonable regulation. It is only where regulation amounts to a taking of the lessee's property rights without compensation that regulation becomes unconstitutional. This principal was affirmed by the U.S. Court of Appeals for the Ninth Circuit in *Gulf Oil Corporation v. Morton*, 493 F. 2d 141 (1974) and *Union Oil Company v. Morton*, 512 F. 2d 743 (1975). In those cases, the Ninth Circuit concluded that the Secretary of Interior had authority to subject oil leases in the Santa Barbara channel to reasonable environmental regulations as long as the regulation did not have the effect of cancelling the leases. Since regulation of Exxon's facilities on the OCS under the Clean Air Act is intended only to control emissions of air pollutants and not intended to prohibit development of the Santa Ynez Unit, such regulation is not inconsistent with Exxon's vested rights under its lease.

In addition, Exxon contends that EPA does not have authority to regulate facilities located on the OCS since the OCS Lands Act confers exclusive authority upon the Secretary of Interior to administer OCS leases. EPA, however, does not intend to interfere with the administration of OCS leasing by the Secretary of Interior. More importantly, section 1333(a)(2) of the OCS Lands Act provides that applicable State laws "shall be administered and enforced by the appropriate officers and courts of the United States." Since the new source review and PSD regulations applicable to Santa Barbara and Ventura Air Pollution Control Districts are administered by EPA, it is apparent that the Administrator of EPA is the appropriate officer of the United States to administer and enforce the applicable provisions of the California State implementa-



tion plan. It is equally apparent that the Secretary of Interior would not be the appropriate official to administer the provisions of the Clean Air Act on the OCS since the Secretary does not presently have any responsibility for administration of the Clean Air Act.

Finally, Exxon asserts that the regulations of the Santa Barbara Air Pollution Control District are not State law and cannot, therefore, be extended to the Outer Continental Shelf. In response, EPA does not intend to apply the new source review regulations adopted by the Santa Barbara Air Pollution Control District to facilities located on the OCS until those regulations have been approved as part of the California State implementation plan. When approved by EPA as part of the State implementation plan, those regulations will become enforceable as the laws of the United States pursuant to sections 110 and 113 of the Clean Air Act (42 U.S.C. 7410 and 7413). Moreover, Exxon is incorrect in its assertion that the regulations adopted by an air pollution control district are not State law. In fact, the California Supreme Court determined precisely this question in its decision in *Orange County Air Pollution Control District v. Public Utilities Commission*, 4 C. 3d 945, 95 Cal. Rptr. 17 (1971), holding that air pollution control districts are public agencies of the State. Thus, regulations adopted by the Santa Barbara Air Pollution Control District are State law for purposes of the OCS Lands Act.

In this regard, both the California Air Resources Board and the Santa Barbara Air Pollution Control District have asserted in discussions with EPA that the Santa Barbara APCD new source review regulation should be applied to the OCS even though the regulation is not part of the approved California State implementation plan. While it is true that section 1333(a)(2) of the OCS Lands Act provides that applicable State laws shall be considered to be the law of the United States for that portion of the OCS adjacent to the State, the legislative history of the OCS Lands Act indicates that State laws are applicable only where there are gaps in relevant Federal law. There are no gaps, however, in the new source review requirements of the California State implementation plan since the substitute new source review regulations promulgated by EPA for the Santa Barbara APCD are presently in effect (40 CFR 52.233(f)). For this reason, EPA does not believe that it is appropriate to apply the new source review rule adopted by the Santa Barbara APCD to facilities located on the OCS until the rule becomes part of the approved State implementation plan for California. It should be noted, however, that EPA will continue to be the appropriate

agency to administer and enforce the provisions of the Santa Barbara new source review rule on the OCS after it becomes part of the California SIP.

#### CONCLUSION

For the foregoing reasons, EPA has determined that the installation of Exxon's Offshore Storage and Treatment facility is subject to preconstruction review under EPA's new source review and prevention of significant deterioration regulations as a major modification to platform Hondo. Pursuant to the provisions of those regulations, Exxon Corp. must obtain the approval of the Administrator prior to the commencement of on-site construction of the OS&T. Commencement of on-site construction of the OS&T without such approval will be a violation of the Clean Air Act and may subject Exxon Corp. to enforcement pursuant to section 113 of the Act (42 U.S.C. 7413). Exxon may, however, continue with off-site fabrication of the OS&T prior to receiving approval to construct from EPA.

Dated: April 13, 1978.

BARBARA BLUM,  
Acting Administrator.

[FR Doc. 78-10464 Filed 4-17-78; 8:45 am]





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

DEC 6 1978

Honorable Cecil D. Andrus  
Secretary of the Interior  
Washington, D. C. 20240

THE ADMINISTRATOR

Dear Mr. Secretary:

Under the recent amendments to the Outer Continental Shelf Lands Act, you will soon be promulgating regulations regarding the conduct of activities authorized by that Act. I am especially interested, of course, in those which will address compliance with the national ambient air quality standards, to the extent that OCS activities may significantly affect the air quality of a state. We would very much like to work with you at the earliest stages in the development of these regulations.

As required by 1977 amendments to EPA's own legislation, the States are now actively engaged in revising their state implementation plans to correct the failure to attain ambient air quality standards. Many of the states that are potentially affected by emissions from OCS oil and gas exploration, development and production activities are among those that have had difficulty in attaining the air quality standards. Therefore, it is important that the regulations under the OCS Lands Act amendments be developed as expeditiously as possible.

This is an excellent chance for our two agencies to work together toward a coherent policy on the nation's oil and gas needs and its environmental imperatives. It is also a good testing ground for EPA's efforts to streamline the environmental permitting process and reduce the administrative burdens on industry. I would appreciate hearing from you soon concerning your plans for developing these regulations.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Doug Costle", is written over the typed name. The signature is fluid and cursive, with a large initial "D" and "C".

Douglas M. Costle



- I. Effect of Grid Size on REM2 Results. 10 km and 1 km grid sizes were compared for the Santa Barbara Oil Spill Trajectory, a 10,000 barrel spill, and the 1986 impact including Sale 48. Results were as follows:

Concentration at Santa Barbara			
Pollutant	10km x 10 km grid	1 km x 1 km grid	Difference
O <sub>3</sub>	0.184 ppm	0.126 ppm	33%
NO <sub>2</sub>	0.038 ppm	0.032 ppm	16%
NO	0.001 ppm	0.001 ppm	-
NMHC	13.9 ppm	12.4 ppm	11%
CO	1.11 ppm	0.760 ppm	31%

II. Backup Information For Maximum Resource Scenario.

1. Assume normal tankering.
2. Can still assume the loading of one tanker or barge at any one time per offshore area. Loading frequency will be increased accordingly. Storage capacities at SBMS must be increased. Also tank filling emissions at SBM increases with increased production rate.
3. For each area the ratios of maximum resource oil production to expected oil production rate and maximum gas production rate to expected gas production rate were reasonably close thus the oil ratios were used to scale up expected emission rates.
4. We had assumed one well drilled per platform. Under maximum resource estimate, wells drilled do not exceed 2 per platform.

Calculations:

1. No increase in tanker/barge loading emission rates.
2. Other emissions scaled up by using ratio of maximum to expected oil production rates.



Title 30 - Mineral Resources  
CHAPTER II - GEOLOGICAL SURVEY  
PART 250--OIL AND GAS AND SULPHUR  
OPERATIONS IN THE OUTER CONTINENTAL SHELF

AGENCY: Department of the Interior, U.S. Geological Survey

ACTION: Advance Notice of Proposed Rulemaking

SUMMARY: This advance notice of proposed rulemaking is being issued to invite public participation in the identification and selection of a course of action, or alternate courses of action, for the control of air emissions on the Outer Continental Shelf (OCS) that significantly affect the air quality of any State. The amendments to the Outer Continental Shelf Lands Act, Public Law 95-372, require the Secretary of the Interior to prescribe regulations for the control of certain air pollution sources on the OCS. After consideration of available data and comments received in response to this notice, a notice of proposed rulemaking will be issued.

DATE: Comments must be received on or before January 31, 1979.

ADDRESS: Comments should be forwarded to Chief, Conservation Division, U.S. Geological Survey, National Center, Mail Stop 600, Reston, Virginia 22092.

FOR FURTHER INFORMATION CONTACT: Theresa Hooks, Office of the Solicitor, Department of the Interior, Washington, D.C. 20240. (202-343-4325).



AUTHORS: E. P. Danenberger, U.S. Geological Survey, U.S. Department of the Interior; Theresa Hooks, Office of the Solicitor, U.S. Department of the Interior; R. A. Karam, Office of OCS Program Coordination, Office of the Assistant Secretary - Policy, Budget and Administration; and Thomas McCloskey, Office of the Assistant Secretary - Energy and Minerals.

SUPPLEMENTARY INFORMATION: The Outer Continental Shelf Lands Act Amendments of 1978, Public Law 95-372, enacted on September 18, 1978, provide that the Secretary of the Interior shall prescribe regulations with provisions "for compliance with the national ambient air quality standards pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.), to the extent that activities authorized under this Act significantly affect the air quality of any State" (section 5(a)(8), 43 U.S.C. 1334). The Joint Explanatory Statement of the Committee of Conference, Report No. 95-1474, 95th Congress 2nd Session, describes the congressional intent in enacting this provision.

The Statement indicates that Congress intended for the Secretary of the Interior to establish a regulatory scheme to ensure that the attainment or maintenance of the ambient air quality standards of an area is not jeopardized by air emissions from operations occurring on the OCS. The Report states: "The standard of applicability the conferees intended the Secretary to incorporate in such regulations is that when a determination is made that offshore operations may have or are having



a significant effect on the air quality of an adjacent onshore area, and may prevent or are preventing the attainment or maintenance of the ambient air quality standards of such area, regulations are to be promulgated to assure that offshore operations conducted pursuant to this act do not prevent the attainment or maintenance of those standards." The Conferees expressly stated that the Secretary of the Interior shall be guided by the Clean Air Act, in consultation with the Environmental Protection Agency, in promulgating regulations to maintain consistency with ambient air quality standards.

The Department intends that operations and activities on the OCS will not be approved if they prevent any State from achieving and maintaining national ambient air quality standards. In implementing a regulatory scheme for air quality control, the Department intends to require lessees to include in their exploration and development and production plans specific information concerning emissions and their effects on coastal areas. It is intended that all proposed activities will be subject to compliance with the requirements of the statute. However, detailed information may not be necessary for certain types of operations and for operations in some parts of the OCS. The Department intends to devise methods by which existing operations can be brought into the regulatory scheme, and the Department intends to continue to work closely and cooperatively with State and local officials in the area of air quality control.



Although the Department intends to control emissions that would prevent the attainment of national ambient air quality standards in a State, or cause non-attainment where the standards are being met, it is unclear whether standards designed to prevent significant deterioration should also be applied and, if so, which standards, State or Federal, should be used. Similarly, whether or not the Environmental Protection Agency's current offset policy should be adopted, in whole or in part, requires further examination. Finally, the phrase "significantly affect" must be analyzed and defined.

REQUEST FOR COMMENT: Any relevant comment on this statutory provision will be reviewed and taken into account in the formulation of proposed rules. Information submitted should be as specific as possible as to the OCS activity of concern and the type of emissions discussed. Comments from interested parties are specifically requested in the following areas:

1. Proposed activities will be subject to review by the Department to assure compliance with air quality regulations. At the time of submission of plans for exploration or for development and production, the lessee will be asked to submit information on projected emissions and the estimated effects of these emissions on any State.

- a) What methods for determining projected emissions and estimated effects should be used for OCS sources?



b) Should information be required on projected emission levels both with and without the application of technologies specifically designed to abate emissions?

c) Should specific abatement technologies be prescribed by the Department of the Interior? Should information about projected emissions using these technologies be required of lessees?

d) Are there OCS areas for which a general finding of lack of significant effect can be made so that detailed submissions by individual lessees are unnecessary?

e) Should sources of emissions which are on the OCS for limited periods of time, such as drilling vessels, be controlled? If so, what length of time should be used?

2. The Department intends to control any activity that would impair a State's ability to attain the national ambient air quality standards or would cause non-attainment where these standards are being met. Both the OCS Lands Act, as amended, and the Clean Air Act, as amended, are oriented toward the attainment of national ambient air quality standards. On the other hand, the legislative history of the OCS Lands Act Amendments of 1978 indicates that State standards for ambient air quality require Federal agencies' consideration. For instance, the Statement of the Conference Committee provides: "The conferees agreed that if an



approved State implementation plan has ambient air quality standards which are more stringent than the national ambient air quality standards, the Secretary of the Interior shall, with appropriate regulations, assure that offshore operations conducted pursuant to this act do not prevent the attainment of those State standards, if the air quality of that State is significantly affected by such offshore operations."

a) In establishing specific controls of emissions that affect the air quality of any State, what consideration should be given to State ambient air quality standards that are more stringent than the national standards?

b) In view of the express language of section 5(a)(8) of the OCS Lands Act, as amended, can State standards be used when "compliance with the national ambient air quality standards" is expressly directed by the statute?

3. The statute requires that the Department control, by regulation, the emissions on the OCS that "significantly affect" the air quality of any State. The Department is considering defining "significantly affect" in terms of additions of pollutants, in amounts to be determined, to an area which is in non-attainment of the national ambient air quality standards or would become a non-attainment area due to the projected emissions. It will be necessary to determine the amount and types of pollutants for which it is reasonable and practical to require controls.



a) What amounts of specific pollutants would constitute a "significant effect" when added to an area which is in non-attainment status?

b) How should precursors of photochemical oxidants be controlled? How should the relationship between the precursors and photochemical oxidants be determined?

c) In determining "significant effect", should the Department use the quantitative approach applied by EPA in its prevention of significant deterioration standards?

d) Are there other methods the Department should consider to determine "significantly affects".

4. Because of the language of the OCS Lands Act Amendments calling for regulations "for compliance with the national ambient air quality standards", the Department is considering limiting its control of OCS emissions to: (1) instances where onshore areas in non-attainment of national standards are subject to further degradation of air quality; and (2) instances where attainment areas would become non-attainment areas if impacted by the projected emissions from OCS operations. Another option is to regulate all emissions impacting onshore areas, whether the area is in attainment or non-attainment, so that not only are national ambient standards attained but air quality which is cleaner than that required by the national ambient standards is also protected.



a) Which option should the Department adopt?

b) If the Department determines that its regulations should prohibit OCS operations from contributing to the significant deterioration of air quality which is cleaner than the national ambient standards, should EPA's standards for preventing significant deterioration (PSD) be employed? Should the Department adopt more stringent State PSD standards?

5. In certain instances, the Environmental Protection Agency regulates air quality in non-attainment areas by requiring that, by the time the proposed source of emissions is to commence operations, the total emissions from existing sources and from the proposed source must be sufficiently less than the total allowable emissions under the State Implementation Plan so as to represent reasonable progress toward attainment of national ambient air quality standards. If they are not, the new source must meet EPA's offset requirements. Other requirements imposed by EPA in non-attainment areas include: that a major new source, or major modification, will meet the lowest achievable emission rate for the particular type of source; that all existing sources owned by the applicant located in the air quality control region are in compliance with all requirements of the State Implementation Plan; and, that emission offsets will provide a positive net air quality benefit in the affected area.



a) As part of his authority to regulate OCS emissions which significantly affect non-attainment areas, should the Secretary require the lessees to enter into legally binding commitments to offset their emissions even though onshore offsets would be necessary?

b) Should all of EPA's conditions for new sources or major modifications to existing sources in non-attainment areas be applied to OCS operations?

c) If the EPA conditions are adopted by Interior, should they be modified for purposes of OCS operations? How?

6. Existing sources of pollutants on the OCS may require special consideration. To what extent should control of emissions from existing facilities be required when such control would require major modification of the facility?

7. The Department intends to continue close and cooperative associations with State and local governments.

a) How should the Department interact with local air pollution control districts? Directly? Through State agencies?

b) What procedures and mechanisms should be used to help assure State and local participation in air quality matters?

c) What should the State role be in enforcement?



This advance notice of proposed rulemaking is based on the authority of section 5 of the Outer Continental Shelf Lands Act, as amended (43 U.S.C. 1334).

Date \_\_\_\_\_

\_\_\_\_\_  
Secretary of the Interior

cc: Secy.'s Surname  
Secy.'s Reading Files (2)  
Asst. Secy. - PBA (2)  
POCS (2)

POCS:RAKaram:aav:12/21/78:x39311







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## APPENDIX M

### COOPERATIVE PROCEDURES BETWEEN THE U.S. GEOLOGICAL SURVEY (USGS) AND THE BUREAU OF LAND MANAGEMENT (BLM)

#### PROTECTION OF CULTURAL RESOURCES RELATED TO MARINE OIL AND GAS OPERATIONS

In recognition of the need for cultural resource protection on the OCS where GS is responsible for the management of offshore oil and gas operations on lands where BLM is the responsible surface management agency, BLM and GS have concluded that:

1. Compliance with the Historic Preservation Act of 1966, as amended, the Archeological and Historic Preservation Act of 1974, Executive Order No. 11593, other legislation, and policy directives regarding protection of cultural resources is mandatory for both agencies.
2. There is a need for long-term management continuity for cultural resources and cultural resources should be considered in all aspects of planning and policy decisions.
3. There is a need to insure that cultural resources are not inadvertently injured or destroyed by oil and gas operations and related activities.
4. There is a need to achieve consistency in the application of cultural resource requirements and stipulations related to marine oil and gas operations.
5. There is a need for a uniform approach to cultural resources identification and protection and for interface procedures between BLM and GS that will permit timely and orderly exploration and development of oil and gas resources on the Outer Continental Shelf (OCS).
6. Substantial delays and conflicts based on protection of cultural resources can be kept to a minimum if proper protection of cultural resources can be accomplished.

Therefore, BLM and GS mutually agree that:

1. The procedures outlined herein are intended to supplement the Cooperative Procedures Agreement of August 1975, but in case of any conflict or inconsistency therewith, the provisions of this agreement shall prevail.



2. Prior to the injury of cultural resources, mitigating measures shall be implemented at a level commensurate with the significance of the resource.

3. Consideration for protection of cultural resources will be given priority over mitigation of impacts.

4. Because BLM has the primary responsibility for resource management of Federal offshore lands, including cultural resources, and because BLM has cultural resource expertise, GS will rely on BLM to provide documentation identifying the possible existence of cultural resources that may be affected by operations conducted on offshore oil and gas leases and to review and comment on cultural resource reports, assessments, and protective measures.

5. Because GS has the primary responsibility for the management of operations conducted on oil and gas leases on the OCS and because GS has the geological and geophysical expertise necessary to determine the feasibility of detecting by remote sensing, possible cultural resources identified by BLM or other knowledgeable sources, GS will notify the lessee when the provisions of the cultural resource stipulation are to be implemented.

In furtherance of the general concepts listed above, the following interface procedures will be followed to assure cultural resource protection in relation to oil and gas operations proposed on offshore leases over which BLM and GS exercise joint responsibilities:

#### LEASE OPERATIONS

1. BLM will include in OCS oil and gas leases a standard stipulation for the protection of cultural resources with the understanding that:

a. GS will implement the provisions of this stipulation whenever BLM or other informed source provides documentation that a cultural resource may exist on a lease and the nature of the resource is such that it can be detected by means of a remote sensing survey. Appropriate documentation includes, but is not limited to, probabilistic studies and archival research.

b. When GS receives documentation from BLM or other informed sources that a cultural resource may exist on a lease and determines that the nature of the resource is such that it may be detected by a remote sensing survey, it will require the lessee to conduct such a survey, as specified in a current Notice to Lessees (NTL) on cultural resources, to determine the potential existence of any cultural resource that may be affected by any operation on the lease.



2. GS shall require the lessee to have data from any remote sensing surveys conducted for cultural resource investigations, examined by a qualified marine survey archeologist to determine if indications are present suggesting the existence of a cultural resource that may be adversely affected by operations on the lease. The report of this survey and assessment shall be submitted simultaneously to GS and BLM for review.

3. If cultural resource indicators are present, the GS shall require the lessee to locate any proposed operation so as not to adversely affect the indicators identified or to establish on the basis of further archeological investigations that a cultural resource does not exist where indicated.

4. In the event that, as a result of an archeological investigation, the presence of a cultural resource is sufficiently established to warrant protection and the proposed operation cannot be relocated, GS shall require the lessee to take no action that may result in an adverse effect on the resource until instructions are received as to its disposition.

5. GS shall inform BLM of the proposed disturbance of the resource. BLM will advise the lessee through GS within five (5) working days as to the disposition of the resource to be affected.

6. In the event of discoveries of cultural resources as the result of approved oil and gas operations, the following actions shall occur:

a. The lessee or operator shall notify GS of cultural resource discoveries.

b. GS shall immediately notify the BLM of such discoveries.

c. The BLM will evaluate the discoveries of cultural resources brought to its attention by GS and will determine, within five (5) working days of being notified, what action will be taken with respect to such discoveries. Appropriate mitigation shall be undertaken prior to proceeding with any operations that might be destructive to the discovery. The responsibility for and cost of investigation and mitigation of such values discovered during operations will be that of the lessor.



7. The provisions of this agreement shall be reviewed at least annually.

*Associate* George L. Tveit  
Director, BLM

3/17/78  
Date

W. A. Rallin  
Director, USGS

3/17/78  
Date



APPENDIX N  
VISUALS ERRATA SHEET

Errata Sheet for Visual No. 1

1. Relocate the proposed Deer Canyon onshore LNG site from Los Angeles County to Ventura County near the Los Angeles-Ventura County boundary at the coastline.
2. Add USA Petrochemical refinery near City of Ventura.
3. Add the following existing onshore pipeline in Ventura County.
  - a. Twenty-two inch Mobil Oil pipeline from Rincon to Ventura near the coastline.
  - b. Twenty-inch ARCO gas pipeline from Ventura in a generally NW direction.
4. Current lease status has changed as reflected by the attached Tract Location Visual, Figure N-1.

Errata Sheet for Visual 9 and 10

1. White areas on Visual No. 9 are not basement outcrops but are, rather, undefined.
2. Faults shown on Visuals 9 and 10 may not be consistent in all cases due to cartographic errors.



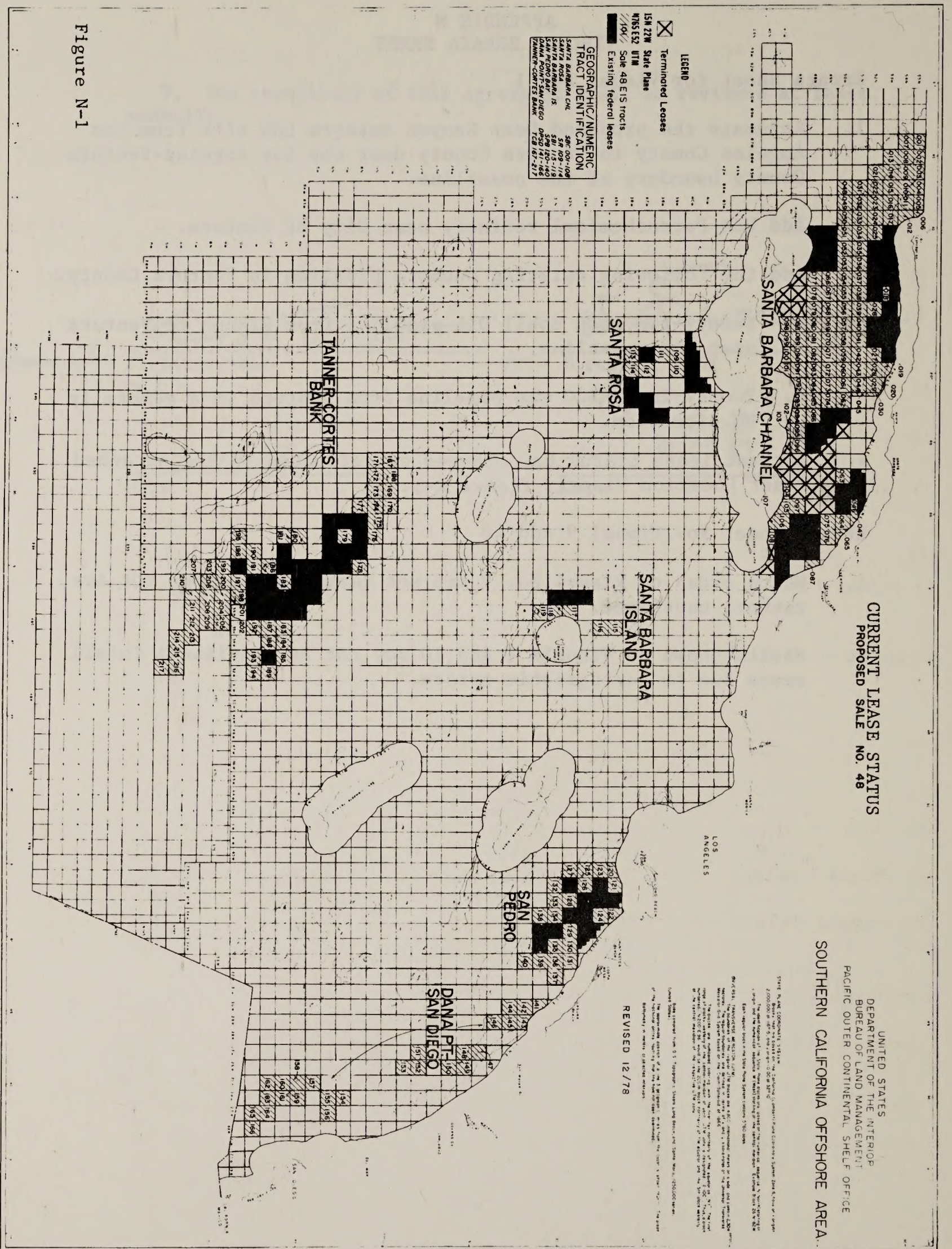


Figure N-1



Errata Sheet for Visual No. 7

APPROXIMATE WATER DEPTH OF BENTHIC HIGH DENSITY  
SAMPLING AREA (HDSA) ASSOCIATIONS

Visual No. 7		Approximate Depth (Meters)		
<u>HDSA Location</u>	<u>Depth Designation</u>	<u>Color</u>	<u>Range</u>	<u>Mean</u>
Huntington-Laguna Beach	Shallow water shelf	Brown	28-109	----
Huntington-Laguna Beach	Slope	Green	161-520	----
Huntington-Laguna Beach	Deep water	Light brown	<500 to 652	----
Point Dume	Shallow water shelf	Light blue	40 to 193	93
Point Dume	Slope	Green	303 to 481	----
Point Dume	Deep water	Light grey	522 to 744	620
Coal Oil Point	Shallow water shelf	Brown	<100	----
Coal Oil Point	Shallow water shelf	Dark green	>100	----
Santa Rosa-Santa Cruz Ridge	Shallow water	Darker yellow		234
Santa Cruz Slope	Intermediate slope	Orange	500 to 1600	≈1200
Santa Cruz Basin	Basin	Blue	>1600	1816
San Miguel Island	Shallow water	Pink	50 to >100	82
San Miguel Island	Intermediate water	Lighter yellow	100 to >200	111
San Miguel Island	Deep water	Light green	<200 to 500	239
Tanner-Cortes Bank	Top	Dark brown	30 to ~200	----
Tanner-Cortes Bank	Trough	Dark grey	~200 to 429	----































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